

# Academic Programs



Academic Programs

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## Accounting

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### Accounting

*College of Business*

*Department of Accounting & Business Law*

150 Morris Hall • 507-389-2965

Chair: P. Schwinghammer

J. Baird, Ph.D., A. Habib, Ph.D., P. Herickoff, J.D., G. Holmes, J.D., D. Levin, J.D., M. Okleshen, Ph.D., M. Rolfes, M.A.S., P. Schwinghammer, Ph.D., B. Smith, M.S., R. Williams, D.B.A., S. Woehle, Ph.D., R. Zelin, Ph.D.

The accounting major is a professional program designed to prepare the student for work in one or more of three areas: public, industrial or governmental/not for profit accounting.

**Admission to Major** typically occurs at the beginning of the student's junior year. A student must be admitted to the program for permission to register for 300-400 level courses.

1. GPA of 2.5 for unconditional admission.
2. Completion of 33 credits of general education requirements.
3. Demonstrated microcomputer competency by successfully completing COMS 101, Introduction to Microcomputers, or equivalent.
4. Completion of ACCT 200, 210; ECON 201, 202, 207; MGMT 200; MATH 112; BLAW 200; Second Year Experience 201.
5. Completion of 60 credits (or in progress).

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#### ACCOUNTING BS

##### **Required General Education (7 credits):**

ECON 201 Principles of Macroeconomics (3)

MATH 112 College Algebra (4)

##### **Required Support Courses (44 credits):**

###### **Lower Division:**

ACCT 200 Financial Accounting (3)

ACCT 210 Managerial Accounting (3)

BLAW 200 Legal, Political and Regulatory Environment of Business (3)

ECON 202 Principles of Microeconomics (3)

ECON 207 Business Statistics (4)

COMS 101 Introduction to Microcomputers (3)

MGMT 200 Introduction to MIS (3)

###### **Upper Division:**

BED 345 Business Communications (3)

FINA 362 Business Finance (3)

IBUS 380 Principles of International Business (3)

MGMT 330 Principles of Management (3)

MGMT 346 Production and Operations Management (3)

MGMT 395 Personal Adjustment to Business (1)

MGMT 481 Business Policy and Strategy (3)

MRKT 310 Principles of Marketing (3)

##### **Required for Major (Core, 33 credits):**

ACCT 300 Intermediate Financial Accounting I (3)

ACCT 301 Intermediate Financial Accounting II (3)

ACCT 310 Management Accounting I (3)

ACCT 320 Accounting Information Systems (3)

ACCT 400 Advanced Financial Accounting (3)

ACCT 410 Business Income Tax (3)

ACCT 420 Auditing (3)

BLAW 450 Contracts, Sales and Professional Responsibility (3)

##### **Required Electives (9 credits):**

Choose three of the following:

ACCT 311 Management Accounting II (3)

ACCT 411 Individual Income Tax (3)

ACCT 421 External Auditing (3)

ACCT 422 Internal Auditing (3)

ACCT 470 Advanced Topics (3)

ACCT 477 International Accounting (3)

BLAW 455 Legal Aspects of Banking and Finance (3)

##### **Required Minor: None**

#### ACCOUNTING MINOR

##### **Required for Minor (Core, 12 credits):**

ACCT 200 Financial Accounting (3)

ACCT 210 Managerial Accounting (3)

ACCT 300 Intermediate Financial Acct. I (3)

ACCT 310 Management Accounting I (3)

##### **Required Electives (9 credits):**

Choose three of the following:

ACCT 301 Intermediate Financial Accounting II (3)

ACCT 311 Management Accounting II (3)

ACCT 320 Accounting Information Systems (3)

ACCT 400 Advanced Financial Accounting (3)

ACCT 410 Business Income Tax (3)

ACCT 411 Individual Income Tax (3)

ACCT 420 Auditing (3)

ACCT 421 External Auditing (3)

ACCT 422 Internal Auditing (3)

ACCT 470 Advanced Topics (3)

ACCT 477 International Accounting (3)

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#### POLICIES/INFORMATION

Students have an advisor from their area of interest assigned to them. Questions and concerns pertaining to advising and the assignment of advisors can be answered by Larry Herke, student relations coordinator, 151 Morris Hall, telephone 507-389-2963.

College of Business majors must complete a minimum of 64 credits outside the College of Business.

Students who are business minors, non-business majors, or those who are not seeking a four year degree may not complete more than 30 credits in the College of Business.

Transfer students must complete a minimum of 30 resident credits at the upper division (300-400) in the College of Business.

## Accounting

**Residency:** Transfer students pursuing a major or minor in the College of Business must complete 50% (one half) of their minor coursework through Minnesota State University, Mankato.

**Information Technology Initiative.** Students with a major or minor in the College of Business are required to acquire a notebook computer with a standard set of applications from the Campus Computer Store at Minnesota State University. Students who are majoring in other colleges will be able to enroll in non-notebook classes offered once per year. For further information see the College of Business section at the front of this bulletin.

**Student Organizations.** Students are encouraged to participate in the Accounting Club. The club is designed to bring students together for both professional and social purposes. Professional activities provide members with a greater understanding of the accounting profession. These activities include speakers and tours, along with social activities.

The Council of Student Business Organizations (COSBO) which is comprised of the presidents of the nine organizations and the college representative of the Student Senate, works directly with the Dean's office in the coordination of activities of the various organizations and sponsors activities of their own.

**Internships.** Students are encouraged to participate in business and industrial organizations through intern programs. Internships are available during the junior or senior years. Students interested in internships should interview early with the internship coordinator for enrollment in this program.

**GPA Policy.** Students must earn a minimum grade-point average of 2.0 (C) on the total courses taken in the College of Business to meet graduation requirements.

**P/N Grading Policy.** No more than one-fourth of a student's major shall consist of P/N grades.

**Assessment Policy.** The College of Business believes that the ongoing assessment of its programs makes a vital contribution to the quality of those programs and to student learning. Student participation is an important and expected part of the assessment process.

### COURSE DESCRIPTIONS

#### 110 (3) Accounting for Non-Business Majors

Taught from a user approach, this course examines the role of accounting in interpreting financial data and the use of cost information in decision making. V

#### 200 (3) Financial Accounting

The accounting process, financial statement preparation, and analysis. Includes the accounting cycle, asset, liability and equity accounting. Emphasis on use of accounting data.

Pre: COMS 101 (MIS majors take COMS 102)  
F, S

#### 210 (3) Managerial Accounting

Preparation and analysis of cost-based management reports: use of cost information to make short-term operating decisions and long-term capital decisions.

Pre: ACCT 200 F, S

#### 300 (3) Intermediate Financial Accounting I

An in-depth analysis of financial accounting concepts and procedures and includes coverage of the income statement, balance sheet, time value of money, receivables and inventories.

Pre: ACCT 210 F, S

#### 301 (3) Intermediate Financial Accounting II

A continuation of Accounting 300, with emphasis on accounting for assets, liabilities and owner's equity.

Pre: ACCT 300 F, S

#### 310 (3) Management Accounting I

Beginning with introduction of cost concepts, cost behavior and relevant costs for tactical decision making, this course emphasizes product and service costing, including job order and process costing systems. Other related topics are budgeting, pricing, cost-volume-profit analysis, standards and variance analysis.

Pre: ACCT 210 F, S

#### 311 (3) Management Accounting II

Contemporary managerial accounting and control systems including activity-based costing, strategic cost management, life cycle costing, Just-in-Time, inventory management, quality control, responsibility accounting. Other managerial issues include cost allocation, decentralization performance and productivity evaluation, theory of constraints, transfer pricing, capital budgeting and international issues in cost management.

Pre: ACCT 310 F, S

#### 320 (3) Accounting Information Systems

A discussion of various accounting information systems. Topics include documentation, internal control, system design, knowledge structures, database design, software evaluation, systems applications and current developments.

Pre: ACCT 300 F, S

#### 400 (3) Advanced Financial Accounting

A study of accounting principles and concepts for mergers, acquisitions, consolidated statements, foreign currency translation, and partnerships.

Pre: ACCT 301 F, S

#### 410 (3) Business Income Tax

The course examines the principles and procedures relating to the determination and computation of federal income taxes for various business entities including sole proprietorships, C corporations, S corporations, partnerships and tax-exempt entities. The course also covers tax research procedures.

Pre: ACCT 200 F, S

#### 411 (3) Individual Income Tax

The course examines the principles and procedures re-

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## Accounting

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lating to the determination and computation of federal income taxes for an individual. Federal estate tax, gift tax, and income taxation of estates and trusts are also examined. The course does not require any accounting or business background. F, S

### 420 (3) Auditing

This course provides a basic introduction to financial statement (external) auditing, internal auditing, and governmental auditing. Topics include an overview of the external audit process, current audit issues, auditing standards, ethical standards, auditors' legal liability, external audit reports, other common reports prepared by auditors, and operational auditing.

Pre: ACCT 320 or concurrent registration F, S

### 421 (3) External Auditing

This course is designed for student planning to take the CPA exam and/or pursue an auditing career in public accounting. Topics include statistical sampling methods, compliance testing, and detailed substantive audit procedures for all transaction cycles.

Pre: ACCT 420 V

### 422 (3) Internal Auditing

This course is primarily for students interested in careers in internal audit, management accounting, or governmental accounting. Topics include internal control structure reviews, operational audits addressing effectiveness and efficiency of business operations, internal audit reports, human relations issues in internal auditing, sampling, statistical methods, computer system audits, and fraud audits.

Pre: ACCT 420 V

### 470 (3) Advanced Topics

The emphasis is on the underlying accounting theory. It also includes an introduction to the Securities and Exchange Commission and a study of the Financial Accounting Standards Board's official pronouncements.

Pre: ACCT 301 V

### 477 (3) International Accounting

A study of accounting principles in various countries. Topics include exchange rates, subleasing, reporting, managerial aspects and problems dealing with multinational corporations.

Pre: ACCT 210 V

### 491 (3) In-Service V

### 493 (1-4) Honors Reading in Accounting V

### 497 (6-16) Internship

Supervised experience in public, industrial or governmental accounting. Students must meet standards established by the employer and the Department of Accounting. Students may not register for internship credit during the semester of graduation.

V

### 499 (1-4) Individual Study of Accounting V

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## Alcohol and Drug Studies

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*College of Allied Health & Nursing*

*Department of Health Science*

213 Highland Center N • 507-389-1527 or 389-5937

Coordinator: Linda Marshall

The Department of Health Science administers an interdisciplinary alcohol and drug studies major and minor.

To graduate with a major in Alcohol and Drug Studies, you need to complete:

- General Education Requirements (44 credits)
- The Alcohol and Drug Studies Required General Education Courses (12 credits)
- The Alcohol and Drug Studies Required Core Courses and Internship (36)
- Required Electives for Major (15 credits of Health Science Electives)
- A minor (Recommended Minors include Community Health, Corrections, Sociology, Social Welfare, and Psychology)

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### ALCOHOL AND DRUG STUDIES

#### Alcohol and Drug Studies Required General Education Courses (13 credits)

- |      |     |  |
|------|-----|--|
| SPEE | 100 | Fundamentals of Speech Communication (3) |
| SPEE | 102 | Public Speaking (3)                      |
| PSYC | 101 | Introduction to Psychology (4)           |
| SOC  | 101 | Introduction to Sociology (3)            |

#### Alcohol and Drug Studies Required Core Courses (36 credits)

- |      |     |  |
|------|-----|--|
| HLTH | 225 | Introduction to Alcohol and Drug Studies (3)   |
| HLTH | 456 | Assessment of Chemical Dependency (3)          |
| HLTH | 469 | Chemical Dependency: Dual Diagnosis (3)        |
| CSP  | 470 | Group Procedures (3)                           |
| CSP  | 471 | Interpersonal Helping Skills (3)               |
| CSP  | 473 | Counseling the Chemically Dependent Family (3) |
| PSYC | 429 | Drug Dependence (3)                            |
| SOC  | 465 | Law and Chemical Dependency (3)                |
| HLTH | 497 | Alcohol and Drug Internship (12)               |

#### Required Minor: Yes

#### ALCOHOL AND DRUG STUDIES MINOR

##### - Track One: Alcohol and Drug Counseling Track

This track includes the Alcohol and Drug Studies Core Courses and Internship Experience. Students will be eligible for licensure in the state of Minnesota as an alcohol and drug counselor with the completion of this track. Minnesota licensure requires passing a written and oral examination.

## Anthropology

### - Track Two: Alcohol and Drug Studies Track (24 credits):

This track includes only the Alcohol and Drug Studies Core Courses. Without the internship experience, students will not be eligible for licensure in the state of Minnesota as an alcohol and drug counselor.

#### Professional Education (12 credits):

HLTH 497 Internship: Alcohol and Drug Studies

#### POLICIES/INFORMATION

Students will need to satisfy any prerequisites in conjunction with the suggested sequence of required courses.

Students must be admitted to the Alcohol and Drug Studies major or minor and all coursework must be satisfactorily completed before registering for the internship experience.

**GPA Policy.** For required courses undergraduate students are required to maintain a 2.5 GPA. Graduate students are required to have a 3.0 GPA.

**P/N Grading Policy.** All courses must be taken for grades with the exception of the internship, which can be taken on a P/NC basis.

Prior to beginning the minor, students are requested to meet with the ADS director (389-5937). At this meeting, students will be asked to complete an application packet and set up a time for a formal screening.

The alcohol and drug studies minor offers an 880-clock-hour internship experience (HLTH 497) with an approved public or private health agency.

The ADS minor with the internship experience satisfies the academic qualifications for credentialing as Board Certified Chemical Dependency Counselor through the Minnesota Board of Certification. Students will also be eligible for licensing as an Alcohol and Drug Counselor through the State of Minnesota Department of Occupational Health.

## Anthropology

College of Social & Behavioral Sciences  
Department of Anthropology  
358 Trafton Science Center N • 507-389-6504

Chair: Winifred Mitchell

Paul F. Brown, Sylvester Lahren, Michael Scullin, Richard A. Strachan.

Anthropology is the study of the origins and diversity of human biology and culture. Anthropologists study the evolution and adaptations of the human species through the four major subdivisions of the discipline: archaeology, biological anthropology, linguistics, and cultural anthropology. The major provides training in all areas of anthropology for the liberal arts major with an interest in

global awareness, cultural diversity, human evolution and adaptation, prehistory, and an understanding of human behavior. For those interested in pursuing anthropology as a career the anthropology major is also designed to prepare students for graduate training.

**Admission to Major.** Admission to major is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.
  - a minimum cumulative GPA of 2.00 (C).
- Contact the department for application procedures.

#### ANTHROPOLOGY BA, BS

##### Required for Major (Core, 23 credits):

- ANTH 101 Introduction to Anthropology (3)
- ANTH 210 Introduction to Archaeology (3)
- ANTH 220 Human Origins (4)
- ANTH 230 People: An Anthropological Perspective (3)
- ANTH 438 Anthropological Theory (3)
- ANTH 240 Language and Culture (3)
- ANTH 490\* Senior Project (2)
- ANTH 490\* Senior Project (2)

\*prerequisite required

##### Required Electives (12 credits):

Choose a minimum of 12 credits from the following:  
All require prerequisites or permission of instructor.

- |            |            |            |
|------------|------------|------------|
| ANTH 311   | ANTH 322   | ANTH 323   |
| ANTH 331   | ANTH 332   | ANTH 333   |
| ANTH 334   | ANTH 410   | ANTH 411   |
| ANTH 412   | ANTH 414   | ANTH 415   |
| ANTH 420   | ANTH 421   | ANTH 430   |
| ANTH 431   | ANTH 432   | ANTH 433   |
| ANTH 434   | ANTH 435   | ANTH 436   |
| ANTH 437   | ANTH 439   | ANTH 480** |
| ANTH 485   | ANTH 486** | ANTH 491** |
| ANTH 492** | ANTH 493** | ANTH 495** |
| ANTH 497** | ANTH 499** |            |

\*\*No more than 6 credits may be applied to major

##### Recommended Support Courses (Statistics, 3-4 credits):

Choose one of the following:

- PSYC 201 Statistics for Psychology (4)
- SOC 201 Social Research I (3)
- MATH 354 Concepts of Probability and Statistics (3)

##### Required for Bachelor of Arts (BA) degree ONLY:

Language (8)

##### Required Minor: Yes. Any.

#### ANTHROPOLOGY MINOR

##### Required General Education (3 credits):

- ANTH 101 Introduction to Anthropology (3)

##### Required for Minor (Core, 9-10 credits):

Choose a minimum of 9 credits from the following:

- ANTH 102 Ancient Peoples (3)
- ANTH 210 Introduction to Archaeology (3)

# Anthropology

ANTH 220	Human Origins (4)
ANTH 230	People: An Anthropological Perspective (3)
ANTH 240	Language and Culture (3)
ANTH 320*	Biological Anthropology (3)
ANTH 322*	Evolution and Behavior (3)
ANTH 438	Theory

## Required Electives (6-7 credits):

Choose a minimum of 6 credits from the following:  
(all require prerequisites or permission of instructor):

ANTH 311	ANTH 320	ANTH 322
ANTH 323	ANTH 331	ANTH 332
ANTH 333	ANTH 334	ANTH 410
ANTH 411	ANTH 412	ANTH 414
ANTH 415	ANTH 420	ANTH 421
ANTH 430	ANTH 431	ANTH 432
ANTH 433	ANTH 434	ANTH 435
ANTH 436	ANTH 437	ANTH 438
ANTH 439	ANTH 490	ANTH 496
ANTH 480**	ANTH 485	ANTH 486**
ANTH 491**	ANTH 492**	ANTH 493**
ANTH 495**	ANTH 497**	ANTH 499**

\*\* No more than three credits may be applied to minor

## POLICIES/INFORMATION

**P/N Grading Policy.** Up to 1/4 of the credits for the major may be taken P/N, but caution in using this option in the major is urged.

**GPA Policy.** Anthropology majors are urged to maintain a 3.0 or better GPA to maximize their options for graduate study and professional employment.

Students majoring in anthropology have an advisor from their area of interest assigned to them. Questions and concerns pertaining to advising and the assignment of advisors can be answered by Clark Johnson, student relations coordinator, 111 Armstrong Hall, telephone 507-389-6306 or by the department chair.

## COURSE DESCRIPTIONS

### 101 (3) Introduction to Anthropology

This course surveys human biological and cultural diversity through time and space. You will learn about questions like: "how did humans evolve?" and "how do anthropologists collect and interpret information about human beings and their ancestors?" F, S

### 102 (3) Ancient Peoples

A general survey of the evolution of human society from the earliest times to the development of written languages. Topics include the evolution of tools, the agricultural revolution, and the origins of urban life. F

### 210 (3) Introduction to Archaeology

A comprehensive examination of modern archaeological theory methods and activities, focusing on American archaeology. Emphasis will be given to data collection, data analysis, and museology. V

### 220 (4) Human Origins

An introduction to the study of human biological evolution and variation. This course focuses on evolutionary theory, mechanisms of evolutionary change, and the fossil record of human evolution. F

### 230 (3) People: An Anthropological Perspective

Part one of this two part sequence for anthropology majors covers cultural variability and organization by examining several examples in detail. Both anthropological methodology and theory will be important parts of this course. F, S

### 240 (3) Language and Culture

Language provides not only communication but identification of oneself and one's group. Humans are extremely sensitive to language, dialect, jargon, and slang. An understanding of language and its relationship to culture is basic to any understanding of human beings. S

### 285 (1-3) Special Topics

Courses to be offered just one time or on an irregular basis according to topic demand for a general interest, sophomore level course. V

### 290 (1-3) Exploratory Studies

Individual study at an introductory level on the topic of student's choice. Designed for students who wish to pursue independent study at the freshman-sophomore level rather than the more advanced level of the 499 individual study.

Pre: Consent

V

### 311 (3) Ancient Egypt

An in-depth study of ancient Egypt, focusing on the relationship between cultural development and the unique Egyptian environment of the time. Emphasis will be placed on the interpretation of archaeological discoveries in the area. V

### 320 (3) Biological Anthropology

Advanced coverage of the material presented in ANTH 220, this course focuses on the fossil record of human evolution, as well as the implications of our evolutionary past for an understanding of modern human behavior and biological variation.

Pre: ANTH 220 or consent

S

### 322 (3) Evolution and Behavior

An examination of the biological basis of human behavior and organization from an evolutionary perspective.

Pre: ANTH 101 or 220 or consent

V

### 323 (3) Primate Behavior

An examination of the ecology, behavior and biology of living primates.

Pre: ANTH 101 or 220 or consent

V

### 331 (3) Human Adaptation Systems

An examination of the dynamics of human cultural adaptation and change. Cultural systems are analyzed from an evolutionary/ecological perspective tracing development of cultural systems from prehistoric times to the present. Systems modeling will be used to understand



cultural systems. A minimum of 10 hours of computer lab time is required. V

**332 (3) Anthropology of Religion**

The variability and universality of human religious expression are explored in specific cross-cultural contexts. F

**333 (3) Ethnographic Film**

This course emphasizes the wealth of ethnographic information which may be captured by visual media. You will learn how to interpret the final product and how to recognize the limitations of visual presentations. V

**334 (3) Native American Cultures of North America**

American Indians adapted to environmental systems in North America with cultures ranging from small groups of forager to cities supported by intensive agriculture. This course presents a variety of perspectives of this cultural diversity from the Ice Age to the 20th century. V

**410 (3) Prehistory of Minnesota**

An analysis of the prehistoric societies in Minnesota from the retreat of the last glacier to European contact. Emphasis will be placed on, but not limited to, archaeological results generated in Southern Minnesota. Pre: ANTH 102 or consent V

**411 (3) Prehistory of North America**

An overview of human society in North America north of Mexico from the arrival of the first humans until European contact. Some emphasis will be placed on the north central part of the continent. Pre: ANTH 101, 102, or consent V

**412 (3) Prehistory of Latin America**

An overview of South America and Middle America from the earliest human occupation until European contact. Some emphasis is placed on the development of agriculture and prehistoric state systems. Pre: ANTH 101, 102, or consent V

**414 (3) Museology**

A review of the history and philosophy of museums, the legal and ethical issues impacting museums, the nature and treatment of collections, creation, exhibition and exhibit design, the role of museums in education, museum personnel and financial management, and museums in the technological/electronic age. Pre: Anth 101, 210, or consent V

**415 (3) Cultural Resource Management**

Review of how cultural resources are being preserved and managed under current laws and regulations. Emphasis on examination of conservation, preservation and rescue methods in modern archaeology, and problems and issues in historic preservation and resource management. Pre: ANTH 101, 210 or consent V

**420 (3) Osteology/Forensic Anthropology**

An advanced examination of the human skeletal system and the application of this information in forensic (legal, criminal, and epidemiologic) cases. Emphasis on laboratory techniques in osteological/forensic studies. Pre: ANTH 220 or consent V

**421 (3) Health, Cultural, and Disease**

Cross-cultural examination of the response of peoples in non-Western societies to the human universal of illness. Non-Western concepts of disease, health, and treatment. Pre: ANTH 101, 220, or consent V

**430 (3) Ethnography of Latin America**

The contemporary peoples and cultures of Mexico and Central and South America. Emphasis is on cultural patterns and contemporary issues of the region. Pre: ANTH 101, 103, or 230, or consent S

**431 (3) Applied Cultural Research**

This course introduces concepts and methods of applying socio-cultural understanding to contemporary problems to bring about the empowerment of affected people. Case/field studies and other research methods in social sciences will change with special attention to its affect on disadvantaged groups of people. Students will also design their own applied projects. Pre: ANTH 101, 230, or consent; ETHN 100, 101, or 150 or consent. V

**432 (3) Social Organization**

Family and kinship are the basis for all human organization. This course explores the role of systems of relationship in both simple and complex cultures. It presents modern analysis of kinship systems including sociobiological, evolutionary, and feminist perspectives as well as traditional kin terminology and marriage and residence patterns. Pre: ANTH 101, 103, or 230, or consent V

**433 (3) Anthropology of Gender**

Major anthropological theories of gender relations are read, discussed, and applied to a variety of contemporary ethnographic case studies. Pre: ANTH 101, 103, or 230, or consent S

**434 (3) Ethnographic Classics**

This course provides an opportunity for students to examine several of the "classic" ethnographies not used in regular course offerings. A different group of ethnographies will be used each year and students may register for the course as many times as they wish. V

**435 (3) Origins of Civilization**

The conditions which led to the evolution of complex societies and the ramifications of the continuing processes are the focus of this course. Pre: ANTH 101, 103, or 230, or consent V

**436 (3) Anthropology of Aging**

An evolutionary and cross-cultural examination of the aging process, status, and treatment of the elderly. Pre: ANTH 101, 230, or 220, or consent V

**437 (3) Applied Anthropology**

Examines the practical applications of anthropological knowledge to problem-oriented research and the problems of directed sociocultural change among contemporary populations. Selected projects and case studies

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## Anthropology

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are used to illustrate the complexity of applied socio-cultural change.

Pre: ANTH 101, 230 or consent V

### 438 (3) Anthropological Theory

Examination of the intellectual history of anthropology from its nineteenth century roots to today's current theoretical trends. Students will learn about the major schools of thought in anthropological theory and practice critical examination of their applications.

Pre: ANTH 101, 220 or consent F

### 439 (3) Qualitative Research Methods

The aim of this course is to make students methodologically literate. Students will learn how to develop research designs that rely on qualitative research methods such as participant observation. They will learn how to apply these methods by participating in small scale studies of human behavior. Some quantitative methods will also be discussed. Students will learn critical examination of published data and conclusions.

Pre: 101, 220 or consent V

### 480 (3-6) Fieldwork: Archaeology/Ethnology

Field experience in which method and theory are learned through participation in an ongoing field project.

Pre: Consent, or one of: ANTH 101, 102, or 220 V

### 485 (1-3) Topics in Anthropology

This course allows faculty the flexibility to consider the challenges of new developments in anthropology. Content will vary from one course to the next. Students may take the course, with the permission of the instructor, more than one time.

V

### 486 (1-3) Workshop (variable sub title)

A brief intensive hands-on introduction to an anthropological topic usually as it applies to a particular issue or skill. Topics vary but might include: Understanding that race is not a scientific concept; combating racism and ethnocentrism; participant observation methods; culture shock; cultural diversity and communication; forensics; cultural resource conservation.

Pre: Depends on topic and instructor V

### 490 (2) Senior Project

Nature and topic of the senior project is jointly determined by the student and faculty members. It may involve writing, laboratory work, fieldwork or various combinations. Planning for this project should begin early in the senior year. Students will present completed projects in a public forum. Must be taken twice/different semesters.

Pre: ANTH core courses and consent F, S

### 491 (1-3) Archaeology Laboratory

An introduction to archaeological laboratory techniques and museological practice, through participation in the various processes involved.

V

### 492 (1-3) Biological Anthropology Laboratory

Guided advanced laboratory work in biological/physical anthropology.

Pre: Consent V

### 493 (1-3) Ethnology Lab

Individual projects are done in close coordination with faculty member.

Pre: Consent V

### 495 (1-3) Honors Reading

Guided reading in topics of students and instructors interests. For students enrolled in Honors Program only.

Pre: Consent V

### 496 (1-3) Senior Seminar

A special capstone course on current anthropological theory and method to be offered on demand to interested groups of senior majors and minors. The course will emphasize the integration synthesis and summary of the core course material and students' electives.

Pre: ANTH core courses and/or consent V

### 497 (1-12) Internship

Positions may vary considerably, but all involve actual working conditions in various field positions such as museums, state parks, archaeological excavations and agencies.

Pre: Consent F, S

### 499 (1-6) Individual Study

A specialized topic of the students' choices. Coordination with a faculty member is necessary.

Pre: Consent F, S

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## Art

*College of Arts & Humanities*

*Department of Art*

136 Nelson Hall • 507-389-6412

Web site: [www.mnsu.edu/dept/artdept/](http://www.mnsu.edu/dept/artdept/)

Chair: James B. Johnson

Harlan Bloomer, Hope Cook, Diana Black, Brian Frink, Ralph Jacobs, Curt Germundson, Rea Mingeva, David Morano, James Tanner, Nancy Wicker.

The Department of Art program is devoted to the development of concepts, attitudes and skills in the visual arts within a broad university curriculum of liberal arts orientation. There are four objectives: professional training of artists and scholars in chosen areas of specialization, preparation of art educators, elective study for students in all areas of the university, and service to the local communities as a source of cultural enrichment. The Department of Art is accredited by the National Association of Schools of Art and Design.

**Admission to Major** is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours;
- a minimum cumulative GPA of 2.00 (C).

In addition to minimum university admission requirements, students requesting admission to the department must complete the following:

- the Drawing/Design sequence (9 credits)
- at least 3 courses in 3 areas of the Studio Elective Sequence



- ART 260 or ART 261

Students may be admitted provisionally while these requirements are being satisfied.

Contact the department for application procedures.

### ART BA

The Bachelor of Arts degree in art is a broad-based liberal arts degree that provides a cultural perspective with a strong foundation in studio training.

#### Required for Major (Core, 33 credits):

- ART 101 Design Foundations (3)
- ART 103 Three Dimensional Design (3)
- ART 110 Drawing Foundations (3)
- ART 260 Art History Survey I (3)
- ART 261 Art History Survey II (3)

Choose 6 courses from at least 5 different areas:

#### AREA 1:

- ART 200 Introduction to **Graphic Design** (3)
- ART 203 Digital Typography (3)
- ART 204 Digital Imaging and Layout (3)

#### AREA 2:

- ART 210 **Drawing** (3)
- ART 212 Life Drawing (3)

#### AREA 3:

- ART 230 **Fibers** (3)
- ART 231 Multi-Media Art Exploration (3)

#### AREA 4:

- ART 240 **Painting** (3)
- ART 245 Watercolor (3)

#### AREA 5:

- ART 250 **Ceramics**: Wheel and Hand (3)
- ART 251 Ceramic Sculpture (3)

#### AREA 6:

- ART 270 **Printmaking**: Relief/Screen (3)
- ART 271 Printmaking: Lithograph/Intaglio (3)

#### AREA 7:

- ART 275 **Photography** (3)

#### AREA 8:

- ART 280 **Sculpture** (3)

#### Required Support Courses (Art History, 6 credits):

Choose a minimum of 6 credits from the following:

- |         |         |         |
|---------|---------|---------|
| ART 413 | ART 414 | ART 415 |
| ART 416 | ART 419 | ART 460 |
| ART 462 | ART 463 | ART 466 |
| ART 468 | ART 469 |         |

#### Required Support Courses (Studio or Art History Specialization, 9 credits):

Choose a minimum of 9 credits at the 300/400 level in your specialization area in consultation with the art advisor.

- |         |                         |
|---------|-------------------------|
| ART xxx | 300/400 Course Elective |
| ART xxx | 300/400 Course Elective |
| ART xxx | 300/400 Course Elective |

#### Required Capstone Experience (1 credits):

Choose one of the following:

- |         |                               |
|---------|-------------------------------|
| ART 495 | Senior Exhibit (1)            |
| ART 496 | Art History Senior Thesis (1) |

#### Required for Bachelor of Arts (BA) degree ONLY:

Language (8)

#### Required Minor: Yes. Any.

### ART BFA

For admission to the BFA programs students must have a minimum GPA of 2.5 and pass ART 391 Portfolio Review. The Bachelor of Fine Arts degree is a program for those students with professional art aspirations.

#### Required for Major (Core, 33 credits):

- ART 101 Design Foundations (3)
- ART 103 Three Dimensional Design (3)
- ART 110 Drawing Foundations (3)
- ART 260 Art History Survey I (3)
- ART 261 Art History Survey II (3)

Choose 6 courses from at least 5 different areas:

#### AREA 1:

- ART 200 Introduction to Graphic Design (3)
- ART 203 Digital Typography (3)
- ART 204 Digital Imaging and Layout (3)

#### AREA 2:

- ART 210 Drawing (3)
- ART 212 Life Drawing (3)

#### AREA 3:

- ART 230 Fibers (3)
- ART 231 Multi-Media Art Exploration (3)

#### AREA 4:

- ART 240 Painting (3)
- ART 245 Watercolor (3)

#### AREA 5:

- ART 250 Ceramics: Wheel and Hand (3)
- ART 251 Ceramic Sculpture (3)

#### AREA 6:

- ART 270 Printmaking: Relief/Screen (3)
- ART 271 Printmaking: Lithograph/Intaglio (3)

#### AREA 7:

- ART 275 Photography (3)

#### AREA 8:

- ART 280 Sculpture (3)

#### Required Support Courses (Specialization, 53 credits):

Choose Advanced Art History and Drawing Courses (18 credits):

Advanced Art History Courses (9-12 credits)

- ART 460 Ancient Art (3) **or**
- ART 414 Early Medieval Art (3) **or**
- ART 415 Later Medieval Art (3) **and**
- ART 466 Realism to Postmodernism (3)

Choose 3 or 6 additional credits from:

- |         |         |         |
|---------|---------|---------|
| ART 413 | ART 414 | ART 415 |
| ART 416 | ART 419 | ART 460 |
| ART 462 | ART 463 | ART 468 |
| ART 469 |         |         |

Advanced Drawing (6-9 credits)

- ART 210 (if not taken as Studio Elective) **or**
- ART 410\* (3)
- ART 212 (if not taken as Studio Elective) **or**
- ART 412\* (3)

\* 410 and 412 may be repeated

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## Art

### *Choose Intermediate Studio Specialization (12 credits):*

Two specializations are required of 6 credits each. Specializations are selected from the 8 areas listed under Studio Electives in the foundation core. The department specializations are: ceramics, drawing, fibers, graphic design, painting, photography, printmaking, and sculpture. The courses taken in Specializations 1 and 2 are 300 level.

#### *Required:*

ART 391 Portfolio Review (1)

Take with second 3XX course in the intended advanced studio specialization; P/N grade only.

Students must pass the Portfolio Review for admission to the BFA degree program and before beginning 4XX advanced studio specialization.

### *Choose Advanced Studio Specialization (18 credits):*

Choose 4XX level courses for the advanced studio specializations.

#### *Required:*

ART Studio Elective (3)

ART 495 Senior Exhibit (1)

### **Required Minor: None.**

### **ART BS, TEACHING**

The Bachelor of Science degree in Art Education prepares students for careers as art educators teaching at the elementary and secondary levels.

### **Required for Major (Core, 33 credits):**

ART 101 Design Foundations (3)

ART 103 Three Dimensional Design (3)

ART 110 Drawing Foundations (3)

ART 260 Art History Survey I (3)

ART 261 Art History Survey II (3)

Choose 6 courses from at least 5 different areas:

#### AREA 1:

ART 200 Introduction to Graphic Design (3)

ART 203 Digital Typography (3)

ART 204 Digital Imaging and Layout (3)

#### AREA 2:

ART 210 Drawing (3)

ART 212 Life Drawing (3)

#### AREA 3:

ART 230 Fibers (3)

ART 231 Multi-Media Art Exploration (3)

#### AREA 4:

ART 240 Painting (3)

ART 245 Watercolor (3)

#### AREA 5:

ART 250 Ceramics: Wheel and Hand (3)\*

ART 251 Ceramic Sculpture (3)

#### AREA 6:

ART 270 Printmaking: Relief/Screen (3)\*

ART 271 Printmaking: Lithograph/Intaglio (3)

#### AREA 7:

ART 275 Photography (3)

#### AREA 8:

ART 280 Sculpture (3)

\* required for BS in Art Education

### **Required Support Courses (Specialization, 25 credits):**

ART 466 Realism to Postmodernism (3)

ART 495 Senior Exhibit (1)

ART 421 Art Methods Elementary School (2)

ART 426 Art Methods Secondary School (3)  
(this should be taken concurrently with Curriculum and Instruction 448)

ART 429 Art Education Seminar (1)

Choose one (as offered):

ART 423 Elementary Art Materials II (3)

ART 424 Art for the Exceptional Child (3)

ART 425 Current Issues in Art Education (3)

ART 428 Teaching Art History and Appreciation (3)

Select a minimum of 12 studio credits in your specialization area at the 300/400 level in consultation with the art advisor:

ART xxx 300/400 level elective

ART xxx 300/400 level elective

ART xxx 300/400 level elective

ART xxx 300/400 level elective

### **Required for Major (Professional Education, 30 credits):**

See the SECONDARY EDUCATION section for admission requirements to Professional Education and a list of required Professional Education courses.

### **Required Minor: None.**

### **ART MINOR**

Choose one of the following tracks:

#### **ART STUDIO TRACK (Core, 18 credits):**

ART 100 Elements and Principles of Art (3) **or**

ART 101 Design Foundations (3) **and**

ART 110 Drawing Foundations (3)

Select 12 credits of art studio electives in consultation with an art advisor:

ART xxx ART xxx ART xxx

ART xxx

#### **ART HISTORY TRACK (Core, 18 credits):**

ART 260 Art History Survey I (3)

ART 261 Art History Survey II (3)

Select 12 credits of art history electives in consultation with an art advisor.

ART xxx ART xxx ART xxx ART xxx

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## POLICIES/INFORMATION

A program planning guide for each major is available in the Department of Art office. Students should obtain one to aid in the planning of their program. Advisory services are available.

Drawing and design courses in the art core should be taken during the freshman year.

**P/N Grading Policy.** A student majoring in art may take a maximum of one-fourth of the art credits for P/N grades and must comply with the college P/N requirements.

**GPA Policy.** A 2.0 GPA is required. For admission to and graduation from the BFA program students must

have a minimum GPA of 2.5. Students on academic probation should refer to the College of Arts and Humanities policy regarding required advising.

Studio courses require two scheduled hours of class meeting time under the direct guidance of the instructor and a minimum of one additional hour of work at the discretion of the student for each credit hour earned.

The frequency of course offerings should be verified with your art advisor or the art department office, since some changes caused by unanticipated circumstances may occur.

Art majors and minors must meet with the Art Department chairperson two semesters prior to their anticipated graduation date so that their graduation credits can be evaluated.

All students should check with the central art office concerning the future availability of courses needed for graduation. ART 421 Art Methods Elementary School, should be taken no sooner than the junior year and is required by state licensure before student teaching. The prerequisite for ART 421 is ART 100.

The total number of transfer credits accepted for each major/minor is as follows: BFA 24, BS 20, BA 16, and Minor 8.

The Department of Art may request the retention of student work for its permanent instructional and exhibition collection. It reserves the right to photograph students and their work. In addition, the department cannot insure student work, material and equipment or take responsibility for its loss or damage.

Art students with junior or senior standing are encouraged to seek internship opportunities in career-related settings that may include museums, production studios, design firms, and other approved venues. Arrangements are made on an individualized basis. A maximum of 6 credits may be applied toward specializations within BA, BS, or BFA degree programs.

Notations showing the costs of individual courses are included in the printed schedules. In some cases, student fees are charged for materials used. Verifying such information with the individual instructor is suggested.

## COURSE DESCRIPTIONS

### 100 (3) Elements and Principles of Art

Basic introduction to art for art minors, education majors (art and elementary) and non-specialists. F, S

### 101 (3) Design Foundations

2-D visual problem solving and artmaking strategies using the elements and principles of design. For Art majors. F, S

### 103 (3) Three-Dimensional Design

An introduction to concepts and processes related to the visual and physical organization of three-dimensional form and space. F, S

### 110 (3) Drawing Foundations

Introduction to traditional drawing techniques and concepts. F, S

### 160 (3) Introduction to Visual Culture

Introduction to Western and non-Western visual arts and the variety of methods by which art is understood. These may include art appreciation, art criticism, the history of art, popular culture, and aesthetic awareness. F, S

### 200 (3) Introduction to Graphic Design

A survey of graphic design with information and projects that explore careers, design and layout form, techniques and processes.

Pre: ART 100, 101 or consent F, S

### 203 (3) Digital Typography

A survey of typography: history, specifications, applications, effective use, methods of generating.

Pre: ART 200 or consent F, S

### 204 (3) Digital Imaging and Layout

An introduction to the meaning and power of imagery. Course covers creation and manipulation of various image forms with current 2D computer programs. Students should have some Macintosh computer experience.

Pre: ART 100, 101, 200 or consent F, S

### 210 (3) Drawing

Continued exploration of drawing techniques and concepts.

Pre: ART 110 F, S

### 212 (3) Life Drawing

Experience in drawing from the human figure.

Pre: ART 110 F, S

### 230 (3) Fibers

Experience with various introductory fiber techniques.

Pre: ART 100, 101, or consent F, S

### 231 (3) Multi-Media Art Exploration

Multimedia art exploration is a problem solving art studio experience involving the use of a variety of traditional and non-traditional art materials. F, S

### 240 (3) Painting

Beginning experience with oil and/or acrylic paint. Emphasis upon technical and conceptual development.

Pre: ART 100, 101, 110 or consent F, S

### 245 (3) Watercolor

Introduction to basic techniques in watercolor.

Pre: ART 100, 101, 110 or consent F, S

### 250 (3) Ceramics: Wheel and Hand

An introduction to basic wheel throwing techniques exploring the potential of clay as a creative and expressive material.

Pre: ART 100, 101, 103 or consent F, S

### 251 (3) Ceramic Sculpture

An introduction to basic sculptural hand building techniques exploring the nature of clay as a creative-expressive medium.

Pre: ART 100, 101, 103 or consent F, S

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## Art

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### **260 (3) Art History Survey I**

Introduction to art history from prehistoric and ancient cultures through the Middle Ages. Includes representative examples and styles of art and architecture of Western (Europe and the Near East) and non-Western cultures (China, India, Japan, Southeast Asia, Africa, Mesoamerica, South America, North America, Australia). F

### **261 (3) Art History Survey II**

Lecture-based survey of the Art and Architecture of both Western and non-Western countries from the thirteenth through twentieth centuries. S

### **270 (3) Printmaking: Relief/Screen**

Introduction to relief and silkscreen printmaking processes. Pre: ART 101, 110 or consent F

### **271 (3) Printmaking: Lithography/Intaglio**

Introduction to intaglio and lithographic printmaking processes. Pre: ART 101, 110 or consent S

### **275 (3) Photography**

Introduction to the techniques and expressive potential of B/W photography. F, S

### **280 (3) Sculpture**

Exploration of the visual and physical organization of three-dimensional form and space through problems employing various media and processes. Pre: ART 103 or consent F, S

### **301 (3) Intermediate Graphic Design**

Problem solving strategies, creative conceiving, type manipulation and image development. Pre: ART 300 or consent F, S

### **302 (3) Interactive Graphic Design**

An exploration of technical, formal, and conceptual components of interactivity in design. Course covers the use of motion, sound, and audience interaction in digital animation and presentation. Pre: ART 200, 203 or 204, or consent F

### **303 (3) Illustration**

Techniques, skills and concepts to create visual images that clarify or elaborate on text. Pre: ART 300 V

### **306 (3) Design for the Web**

An exploration of visual and conceptual web principles. Topics of study include: web site categorization, construction, navigation, and usability, non-linear narrative, and experimental works. Covers basic HTML, WYSIWYG and preparation of text and graphics for the web. Pre: ART 200, 203 or 204, or consent S

### **330 (3) Fibers**

Fabrication of textiles using four or multi-harness floor looms and off-loom techniques. Must be taken two times before advancing to 430. Pre: ART 230 or consent F, S

### **340 (3) Painting**

Intermediate painting. Emphasizing individual creative development. Must be taken twice before advancing to 440. Pre: ART 240 or consent F, S

### **345 (3) Watercolor**

Experience in advanced watercolor techniques and concepts. Must be taken twice before advancing to 445. Pre: ART 245 or consent F, S

### **350 (3) Ceramics**

An intermediate course emphasizing personal exploration and creative research relating to hand building, molding processes and/or the potters wheel. Must be taken twice before advancing to 450. Pre: ART 250 or 251 F, S

### **370 (3) Printmaking**

Continued exploration of intaglio, lithographic, relief and silkscreen processes. Must be taken twice before advancing to 470. Pre: ART 270 or 271 F, S

### **375 (3) Black and White Photography**

Intermediate level material on camera work, processing, and calibration. In rotation with ART 376, ART 377. Pre: ART 275 V

### **376 (3) Color Photography**

Processing, color theory, color correction, and other considerations in color photography. In rotation with ART 375, ART 377. Pre: ART 275 V

### **377 (3) Digital Photography**

Covers the making, manipulation and use of electronically produced photographic images. Topics include Kodak Photo CD, digital camera use, electronic photo retouching, computer image enhancement and combination, and incorporation of traditional techniques for creative solutions of fine and commercial art problems. In rotation with ART 375, ART 376. Pre: ART 275 V

### **380 (3) Sculpture**

Investigation of three-dimensional form, space and media in search of a personal aesthetic statement. Must be taken twice before advancing to 480. Pre: ART 280 F, S

### **391 (1) Portfolio Review**

Required of all B.F.A. majors before taking 4XX advanced studio specialization sequence to continue in program. F, S

### **401 (3-9) Advanced Graphic Design**

Advanced study in graphic design for print-based media such as advertising, brochure, package, poster, identity. Design solutions will be created through study of problem solving and design strategies, design styles and theory, and techniques for type and image development. F, S

### **402 (3) Interactive Graphic Design-Advanced**

Advanced study of motion, sound, and interactivity in design. Students build on existing skills to create conceptually and technically advanced works of digital communication. Pre: ART 302 or consent F

**403 (3) Illustration**

Expansion of individual techniques, skills and concepts to create visual images that clarify or elaborate on text. May be repeated.

Pre: ART 303 V

**406 (3) Design for the Web-Advanced**

An advanced course focusing on the web, new media, and design problems. Students continue developing technical skills while investigating the potential for communication using the web.

Pre: ART 306 or consent S

**410 (3-9) Drawing Workshop**

Continued in-depth exploration of drawing techniques and concepts. May be repeated.

Pre: ART 210, 212 F, S

**412 (3) Life Drawing**

Advanced experience in drawing from the human figure. May be repeated.

Pre: ART 212 F, S

**413 (3) Scandinavian Art**

Overview of representative examples of the history of Scandinavian art from pre-Viking to modern times, concentrating on elements typical of each country or period and on developments that were particularly influential in the broader history of Western art.

Pre: ART 160, 260, 261 or consent V

**414 (3) Early Medieval Art**

Introduction to art and architecture of Western Europe, the Byzantine Empire, and the Islamic world from the second to the early twelfth centuries. Examination of representative works of art and major styles of Christian, Jewish, Germanic, Celtic, and Islamic cultures.

V

**415 (3) Later Medieval Art**

Introduction to the art and architecture of Western Europe from the mid-twelfth through the fifteenth centuries. Examination of representative works of art and major styles of secular and Christian religious medieval art of the Romanesque and Gothic periods.

V

**416 (3) Art of Africa, the Americas and the South Pacific**

Introduction to the art and architecture of indigenous peoples. Examination of representative works of art and major styles and cultures of preliterate societies in Africa, the Americas, Oceania, and of Pre-Columbian civilizations in the Americas.

Pre: ART 260 and 261 or consent V

**419 (3) Gender in Art**

Historical survey of the representation of gender with comparison of the artistic efforts of males and females and examination of art used to present gender-based issues including homosexuality, feminism, censorship and pornography.

Pre: ART 261 or consent V

**421 (2) Art Methods Elementary School**

Art expression related to child growth, development and

teaching strategies. (Required for student teaching and certification.)

Pre: ART 100 or 101, Jr. status or consent F, S

**423 (3) Elementary Art Materials II**

Advanced elementary teaching methods and art materials, emphasis on three-dimensional projects.

Pre: ART 421 V

**424 (3) Art for the Exceptional Child**

Theory and practice of teaching mentally challenged, physically handicapped and other exceptionals.

Pre: ART 421 V

**425 (3) Current Issues in Art Education**

Teaching art as related to current trends, philosophies, and issues.

Pre: ART 421 V

**426 (3) Art Methods Secondary School**

The characteristics of art expression and evaluation at the junior and senior high level: the status, curricula and strategies of teaching. (Required for student teaching) Should be taken concurrently with Curriculum and Instruction 448.

Pre: ART 421 F

**428 (3) Teaching Art History and Appreciation**

Application of instruction in art history and appreciation to elementary and secondary schools.

Pre: ART 260, 261, 421 or consent V

**429 (1) Art Education Seminar**

Capstone experience for students preparing to teach art. Explores and emphasizes information and skills appropriate for teaching art.

V

**430 (3-9) Fibers**

Advanced fabrication of textiles using loom and off loom techniques. May be repeated.

Pre: ART 330 F, S

**440 (3-9) Painting**

Advanced painting. Continued development of a focused individual expression. May be repeated.

F, S

**445 (3-9) Watercolor**

Advanced experience in watercolor. May be repeated.

Pre: ART 345 F, S

**450 (3-9) Ceramics**

An advanced course which emphasizes individual research in technical, aesthetic and conceptual considerations. May be repeated.

Pre: ART 350 F, S

**460 (3) Ancient Art**

Introduction to the art and architecture of the ancient era in its historical and cultural frameworks. Examination of representative works of art and major styles of ancient Mesopotamian, Egyptian, Aegean, Greek, Etruscan, and Roman cultures.

Pre: ART 260 or consent V



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## Art

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### **462 (3) Renaissance Art**

Origins and development of Northern and Italian Renaissance art and architecture as an expression of historical, cultural and religious issues.

Pre: ART 261 or consent ALT-S

### **463 (3) Mannerism to Romanticism**

Historical survey of art, architecture and urban planning in Europe and America from the late sixteenth to mid-nineteenth century: Mannerism, Baroque, Rococo, Neoclassicism and Romanticism.

Pre: ART 261 or consent ALT-S

### **466 (3) Realism to Postmodernism**

Historical survey of art, architecture and urban planning in Europe and America from the mid-nineteenth century to the present: Realism, Impressionism, Expressionism, Surrealism, Abstract Expressionism, Minimalism, Op Art, Pop Art, and Postmodern issues and trends.

Pre: ART 261 or consent F

### **468 (3) Design: History and Theory**

Survey of Graphic Design, Industrial Design and Architecture from historical and theoretical perspectives. Design issues examined from formal and contextual points of view, using analysis strategies that consider style, composition, historical context, functional/propagandistic significance and communicative ability. V

### **469 (3) Asian Art**

Historical survey of the art and architecture of China, India, Korea and Japan from pre-history to the 20th century.

Pre: ART 260, 261 or consent V

### **470 (3-9) Print Studio**

Continued investigation of advanced print making techniques and concepts. May be repeated.

Pre: ART 370 F, S

### **475 (3-9) Photography**

Expanding technical knowledge and visual awareness while building a portfolio in selected areas. May be repeated.

Pre: ART 375, 376 or consent F, S

### **480 (3-9) Sculpture**

Continuing development of a strongly personal means of aesthetic expression in three dimensions. May be repeated.

Pre: ART 380 F, S

### **492 (1-6) Art History Seminar**

Specific problems in art emphasizing both individual research and contributions to the seminar group on advanced, in-depth topics.

Pre: Consent V

### **494 (3) Topics**

Lecture/discussion/studio course on a selected area of discourse relating to the study of Art History, Art Criticism, Art Education or Art Studio. May focus on a specific artist, style period, cultural group or technical or methodological problem. V

### **495 (1) Senior Exhibit**

A required course in all art major degree programs. Students plan and present art work in an exhibition.

Pre: Consent F, S

### **496 (1) Art History Senior Thesis**

Capstone writing project. Advanced study and research required. Topic of the senior thesis determined jointly by the student and the faculty advisor. Required for art history specialization.

Pre: Consent of advisor F, S

### **497 (1-6) Internship**

Field experience in professional settings relating to the specialization: graphic design, museum or arts administration, etc.

Pre: Jr. standing with consent of advisor and department chair F, S

### **499 (1-9) Individual Study**

Advanced level pursuit of special projects of research on an independent basis. Requires contractual agreement in art office for registration.

Pre: Consent F, S

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## Astronomy

*College of Science, Engineering and Technology*

*Department of Physics and Astronomy*

141 Trafton Science Center N • 507-389-5743

Web site: [www.mnsu.edu/dept/physast](http://www.mnsu.edu/dept/physast)

Chair: Louis Schwartzkopf

Paul Eskridge, Steven Kipp, James Pierce

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The astronomy program serves the needs of a wide range of students, from those with only a casual interest in the subject to those students planning careers in the field. The 100-level courses (which include general education offerings) are designed to introduce astronomy to the student with a minimal background in mathematics and the physical sciences. The courses taken by astronomy majors and minors cover a variety of topics in modern astronomy and astrophysics and require significant preparation in mathematics and physics.

The astronomy major serves as the first step toward a career in teaching or research in astronomy. Students majoring in astronomy are strongly encouraged to consider a double major with physics, mathematics or computer science.

**Admission to Major** is granted by the department. Minimum university admission requirements are

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

Many courses in the astronomy program require prerequisites. Students should consult the COURSE DESCRIPTIONS section of this bulletin to determine these courses.

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### ASTRONOMY BA

This major is intended to prepare the student for employment in a variety of roles in support of professional astronomy, rather than for graduate work.



## Astronomy

### Required General Education (9 credits):

MATH	121	Calculus I (4)
PHYS	221	General Physics I (5)

### Required for Major (Support Courses, 21 credits):

MATH	122	Calculus II (4)
MATH	223	Calculus III (4)
MATH	321	Ordinary Differential Equations (4)
PHYS	222	General Physics II (5)
COMS	272	FORTTRAN Programming (4)

### Required for Major (Core, 30 credits):

AST	201	Spherical Astronomy (2)
AST	215	Astronomy and Astrophysics I (4)
AST	225	Astronomy and Astrophysics II (4)
AST	353	Photometry I (2)
AST	354	Photometry II (2)
AST	355	Astrometry (2)
AST	357	Spectroscopy (2)
AST	420	Stellar Astrophysics (3)
AST	421	Stellar Structure (3)
AST	430	Galactic Structure (3)
AST	431	Extragalactic Astronomy (3)

### Required for Bachelor of Arts (BA) degree ONLY: Language (8)

### Required Minor: None.

### ASTRONOMY BS

Most professional astronomers hold a doctorate in astronomy or astrophysics; this major is designed to prepare students for graduate studies in these areas.

### Required General Education (9 credits):

MATH	121	Calculus I (4)
PHYS	221	General Physics I (5)

### Required Support Courses (Prerequisites, 20 credits):

MATH	122	Calculus II (4)
MATH	223	Calculus III (4)
MATH	321	Ordinary Differential Equations (4)
PHYS	222	General Physics II (5)
PHYS	435	Modern Physics I (3)

### Required for Major (Core, 48 credits):

AST	201	Spherical Astronomy (2)
AST	215	Astronomy and Astrophysics I (4)
AST	225	Astronomy and Astrophysics II (4)
AST	353	Photometry I (2)
AST	354	Photometry II (2)
AST	355	Astrometry (2)
AST	357	Spectroscopy (2)
AST	420	Stellar Astrophysics (3)
AST	421	Stellar Structure (3)
AST	430	Galactic Structure (3)
AST	431	Extragalactic Astronomy (3)
PHYS	441	Mechanics (4)
PHYS	447	Electricity and Magnetism I (3)
PHYS	448	Electricity and Magnetism II (3)
PHYS	461	Quantum Mechanics (4)
COMS	272	FORTTRAN Programming (4)

### Required Minor: None.

### ASTRONOMY MINOR

### Required General Education (9 credits):

MATH	121	Calculus I (4)
PHYS	221	General Physics I (5)

### Required Support Courses (Prerequisites, 9 credits):

MATH	122	Calculus II (4)
PHYS	222	General Physics II (5)

### Required for Minor (Core, 10 credits):

AST	201	Spherical Astronomy (2)
AST	215	Astronomy and Astrophysics I (4)
AST	225	Astronomy and Astrophysics II (4)

### Required Electives for Minor (9 credits):

Choose a minimum of 9 credits from the following courses:

AST	353	AST	354	AST	355
AST	357	AST	420	AST	421
AST	430	AST	431		

### POLICIES/INFORMATION

**GPA Policy.** Astronomy majors or minors must maintain a minimum 2.5 GPA in all coursework for their astronomy program, and in addition must earn a C or better for a course to apply to their major or minor. These standards apply to the courses required for the degree and their prerequisites. A minimum cumulative GPA of 2.0 is required for graduation. There are no prerequisite GPA requirements for internships.

Refer to the College regarding required advising for students on academic probation.

**P/N Grading Policy.** No more than one-fourth of the total undergraduate degree requirements may be earned in P/NC courses.

**Residency and Transfer Credit.** At least 30 hours of undergraduate credit must be earned at Minnesota State University, Mankato during the last two academic years.

Students majoring in astronomy have an advisor from their area of interest assigned to them. Questions and concerns pertaining to advising and the assignment of advisors can be answered by Angie B. Bomier, student relations coordinator, C125 Trafton Science Center, telephone 389-1521.

The astronomers operate two observatories on the southern edge of the campus: Standeford Observatory contains an 11-inch Schmidt-Cassegrain telescope, used for visual observations by general education students and other observatory visitors. Several other 8- to 13-inch telescopes are also available for instructional use by students in Astronomy 125. Andreas Observatory houses a 0.5-meter computer-controlled Cassegrain telescope. This instrument, which is equipped with photographic and electronic cameras and photometers, is used primarily for advanced instruction and faculty research. Standeford Observatory is open regularly for students

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## Astronomy

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and other visitors during the spring and the fall. Public viewing nights at Andreas Observatory are held occasionally during the year as weather permits.

### COURSE DESCRIPTIONS

#### 101 (3) Introduction to Astronomy

Broad survey of astronomy: the night sky, seasons, moon phases, eclipses, light, telescopes, stars, stellar evolution, galaxies, cosmology, the solar system. *General Education Category 3.* F, S

#### 102 (3) Introduction to the Planets

Survey of our solar system: the sun, planets, moons, asteroids, comets, and meteoroids; history of the discovery and exploration of the solar system. *General Education Category 3.* F, S

#### 104 (2) Introduction to Experimental Astronomy

Experiments in astronomy; astronomical observations; measurement, interpretation, and analysis of various types of astronomical data. *General Education Category 3.* Pre or Coreq: AST 101 or 102 V

#### 115 (2) Life in the Universe

The probability of extraterrestrial intelligent life; the chemical basis of life; planetary environments; habitable zones; the Drake equation; UFOs; space travel; interstellar communication; limits on technical civilizations. *General Education Categories 2 and 3.* F, S

#### 125 (3) Observational Astronomy

Techniques for observing with naked eye, binoculars and small telescopes; constellation and star identification; use of star atlases and handbooks; observations of stars, binaries, clusters, nebulae, etc. Evening observing sessions required. Pre: AST 101 F

#### 201 (2) Spherical Astronomy

The celestial sphere; coordinate systems; sidereal and solar time; diurnal motion; precession; proper motion; refraction; aberration; parallax. Requires a background in trigonometry. S

#### 215 (4) Astronomy and Astrophysics I

Celestial mechanics; gravitational and tidal forces; stellar motions and parallax; radiation and matter; magnitudes and stellar spectra; binary stars and stellar masses; stellar structure and evolution. Pre: MATH 121 and PHYS 221 F

#### 225 (4) Astronomy and Astrophysics II

Stellar endpoints; close binary systems; variable stars; the Milky Way; normal galaxies; galactic evolution; active galaxies and quasars; cosmology. Pre: AST 215, MATH 122, PHYS 222 S

#### 294 (1-6) Workshop

A short course devoted to a specific astronomical topic. May be repeated for credit on each new topic. V

#### 351 (1) Telescope Operations

Telescope optics; operating the 0.5-meter telescope; point-

ing and guiding; preparation of observing lists and finder charts; operation of the telescope's ancillary equipment. Pre: AST 201 and 215, consent V

#### 353 (2) Photometry I

Photometric systems; observational techniques of point-source photometry; methods of data reduction; interpretation of data. Pre: AST 215 ALT-F

#### 354 (2) Photometry II

Observations of extended sources; photometric calibration of extended sources; use of secondary standard stars. Pre: AST 353 ALT-S

#### 355 (2) Astrometry

Reduction of digital images to determine positions, proper motions, and parallaxes of stars; analysis of errors. Pre: AST 201, and 215 ALT-F

#### 357 (2) Spectroscopy

Line identification; radial velocity determinations; spectral classifications. Pre: AST 225 ALT-S

#### 420 (3) Stellar Astrophysics

Blackbody radiation; radiative transfer; atomic structure; spectroscopic notation; excitation; ionization; absorption and emission coefficients; line profiles; analysis of stellar spectra. Pre: AST 225 and PHYS 222 ALT-F

#### 421 (3) Stellar Structure

The gaseous state; degenerate matter; equations of stellar structure; polytropes; models of stellar interiors and atmospheres; stellar evolution; nucleosynthesis; stellar endpoints. Pre: AST 420 ALT-S

#### 430 (3) Galactic Structure

Structure, kinematics, and dynamics of our galaxy. Pre: AST 225, PHYS 222, MATH 223, and COMS 272 ALT-F

#### 431 (3) Extragalactic Astronomy

Normal galaxies; groups and clusters of galaxies; galaxy interactions and mergers; active galactic nuclei; large-scale structure: galaxy formation and evolution; cosmology. Pre: AST 430 ALT-S

#### 488 (1-4) Seminar

May be repeated for credit on each new topic. Pre: Consent V

#### 491 (1-6) In-Service

A course designed to upgrade the qualifications of persons on-the-job. V

#### 494 (1-6) Workshop

A short course devoted to a specific astronomical topic. May be repeated for credit on each new topic. V

#### 495 (1-4) Selected Topics

A course in a particular area of astronomy not regularly offered. May be repeated for credit on each new topic. Pre: Consent V

## Athletic Training

### 497 (1-16) Internship

Provides a student the opportunity to gain expertise and experience in a special field under the supervision of a qualified person.

Pre: Consent V

### 499 (1-8) Individual Study

Individual study under the guidance of an astronomy faculty member.

Pre: Consent F, S

## Athletic Coaching

*College of Allied Health & Nursing  
Department of Human Performance  
1400 Highland Center • 507-389-6313*

Chair: Harry Krampf

This minor prepares students for coaching positions in Minnesota and other states. For further information, contact the Department of Human Performance.

### ATHLETIC COACHING MINOR

#### Required for Minor (Core, 21-24 credits):

HP 252 Officiating Theory (1)  
HP 340 Prevention and Care (2)  
HP 470 Psychology of Coaching (3)  
HP 462 Sports Administration (2)  
HP 482 Coaching Practicum (1)  
HLTH 210 First Aid and CPR (3)  
BIOL 220 Human Anatomy (4)

Choose one course from the following:

HP 354 Coaches Physiology (1)  
HP 414 Physiology of Exercise (3)

Choose one course from the following:

HP 371 Scientific Principles of Sport (2)  
HP 348 Structural Kinesiology and Biomechanics (3)

Choose Coaching Theory courses in two different sports (2 credits):

HP 301	HP 302	HP 303
HP 305	HP 306	HP 309
HP 310	HP 311	HP 318

### POLICIES/INFORMATION

Student must apply for practicum and athletic coaching minor.

**GPA Policy.** A 2.0 GPA is required.

**P/N grading policy.** All courses in the minor must be taken "grade only" except HP 482 which is P/N.

## Athletic Training

*College of Allied Health & Nursing  
Department of Human Performance  
Chair: Harry Krampf*

1400 Highland Center • 507-389-6313

Program Director: Patrick Sexton

Kent K. Kalm, Debra Runkle

The Athletic Training major is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), and prepares students for careers in the Allied Health Care Profession of Athletic Training. The Certified Athletic Trainer (ATC) is a highly educated and skilled professional specializing in health care for the physically active and athletic populations. In cooperation with physicians and other allied health professionals, the athletic trainer functions as an integral member of the athletic health care team in secondary schools, colleges and universities, sports medicine clinics, hospitals, professional sports programs, and corporate and industrial settings.

The broad based major does not require a minor for completion of degree requirements, however students are strongly encouraged to work toward an additional major/minor in a related field. In addition to course requirements, students spend a minimum of 900 hour, evenly distributed over a two-year period, of supervised clinical experience at Minnesota State University, and in approved clinical settings within the community.

### Admission to Major

Application for admission to the Athletic Training Major at the junior-level is a selective process, not all students that apply will be accepted. Due to accreditation standards the total number of students accepted into the program at the junior-level will be limited. The selection process is competitive and is based on the student's:

- 1) cumulative GPA and prerequisite GPA
- 2) completion of the general education prerequisites (as listed below)
- 3) completion of the required major courses (as listed below)
- 4) evaluation of work performance during pre-athletic training level assignments/observations in the MSU athletic training room
- 5) letters of recommendation and an interview, and
- 6) compliance with established technical standards for physical, cognitive, and attitudinal abilities that an entry-level athletic trainer must possess.

A minimum cumulative GPA of 2.75, on a 4.00 scale, is required as an admission standard. Each prospective student MUST take HP 140 during the fall of their freshman or sophomore year as an introduction to the profession, the program, and the program application process. An application packet may be obtained from the program director during spring semester and must be completed and returned by May 1st. Transfer students must meet all application requirements prior to application. All athletic training specific prerequisite courses (HLTH 210, HP 140, 341, 348) must be taken on campus, remaining transfer courses may or may not fulfill educational competencies of the program and must be approved by the program director prior to application.

Courses required for program application: HLTH 101, HLTH 210, PSYC 101, BIOL 100, BIOL 220, BIOL 230, HP 140, HP 341, and HP 348.

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## Athletic Training

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### ATHLETIC TRAINING BS

**Required General Education (11 credits):**

HLTH	101	Health and the Environment (3)
PSYC	101	Psychology (4)
BIOL	100	Our Natural World (4)

**Required Major Courses (16 credits):**

HLTH	210	First Aid and CPR (3)
BIOL	220	Human Anatomy (4)
BIOL	230	Human Physiology (4)
CHEM	111	Chemistry of Life Processes (5) (or higher)

**Required for Major (38 credits):**

HP	140	Introduction to Athletic Training (2)
HP	341	Athletic Training Techniques (3)
HP	342	Evaluation Techniques I (3)
HP	346	Evaluation Techniques I Clinical (1)
HP	343	Evaluation Techniques II (3)
HP	347	Evaluation Techniques II Clinical (1)
HP	348	Structural Kinesiology and Biomechanics (3)
HP	414	Physiology of Exercise (3)
HP	436	Nutrition in Exercise and Sport (2)
HP	440	Medical Aspects of Athletic Training (3)
HP	442	Therapeutic Modalities (2)
HP	444	Rehabilitation Techniques (2)
HP	456	Athletic Testing and Conditioning (2)
CSP	471	Interpersonal Helping Skills (3)
HP	480	Senior Seminar (3)
HP	484	Clinical Techniques in Athletic Training I (1)
HP	485	Clinical Techniques in Athletic Training II (1)

**Required Minor: None**

### POLICIES/INFORMATION

**GPA Policy.** Once accepted into the Athletic Training major, a minimum cumulative GPA of 2.75 must be maintained. Student must also maintain a minimum GPA of 3.0 in all designated major courses. A required major course in which a student receives a grade of D or below must be retaken and improved to a C or better.

**P/N Grading Policy.** All required general education and major courses must be taken for grade.

**Clinical Experiences.** All clinical requirements must be completed as scheduled, with the student showing satisfactory progress in clinical proficiencies as evaluated by clinical instructor/supervisors.

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## Automotive Engineering Technology

*College of Science, Engineering & Technology  
Department of Automotive & Manufacturing  
Engineering Technology  
205 Trafton Science Center E • 507-389-6383*

Fax: 507-389-5002

Web site: [www.amet.mnsu.edu](http://www.amet.mnsu.edu)

Chair: Kirk Ready

Lee Anderson, Ann Goebel, Andrzej Markowski, Bruce Jones, Harry Petersen, Paul Sullivan

Automotive Engineering Technology students study the design, development, testing, application, modification, and maintenance of vehicles and their components for use in transportation systems. Graduates obtain positions in operations, product research, design and development, technical service, manufacturing, and technical sales. Fields include passenger cars, trucks, off-road vehicles, emissions, safety, fuels and lubricants, industrial and agricultural equipment, and recreational vehicles.

**Accreditation.** The program is accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, Telephone: 410-347-7700

**Admission to Major** is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours;
- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

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### AUTOMOTIVE ENGINEERING TECHNOLOGY BS

**Required General Education (22 credits):**

ENG	101	Composition (4)
SPEE	100	Fund. of Speech Communication (3) <b>or</b>
SPEE	102	Public Speaking (3)
MATH	115	Precalculus Mathematics (4)
MATH	121	Calculus I (4)
PHYS	211	Principles of Physics I (4)
CHEM	105	Introduction to Chemistry (3)

**Required Support Courses (15 credits):**

ENG	271	Technical Communication (4)
MATH	127	Calculus II for Engineering Technology: Integration (2)
PHYS	212	Principles of Physics II (4)
STAT	154	Elementary Statistics (3)
COMS	171	Introduction to C++ Programming (2)

**Required for Major (Core, 57 credits):**

AET	102	Introduction to Automotive Engineering Technology (1)
EET	113	DC Circuits (3)
MET	141	Computer Aided Drafting (4)
MET	144	Industrial Design (2)
AET	160	Automotive Systems (4)
AET	161	Automotive Driveability/Diagnosis (4)
MET	177	Material Processing I and Metallurgy (4)
MET	245	Computer Aided Design (3)
AET	262	Auto Computers and Electronics (4)
AET	264	Vehicle Testing and Chassis Design (4)
MET	322	Statics, Dynamics, and Mechanics of Materials (5)
AET	334	Fluid Power (3)

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## Automotive Engineering Technology

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AET	365	Automotive Laboratory (2)
AET	366	Automotive Thermodynamics (3)
AET	378	Composite Materials (3)
MET	424	Industrial and Construction Safety (2)
AET	468	Automotive Research and Design (3)
AET	488	Senior Design I (1)
AET	489	Senior Design II (2)

**Required Minor: None**

### AUTOMOTIVE ENGINEERING TECHNOLOGY MINOR

**Total Credits (16)**

**Required for Minor (9 credits):**

AET	102	Introduction to Automotive Engineering Technology (1)
AET	160	Automotive Systems (4)
AET	161	Automotive Driveability and Diagnosis (4)

**Required Electives (7 credits):**

Choose 7 credits of AET or MET courses.

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### POLICIES/INFORMATION

**GPA Policy.** A minimum GPA of 2.0 is required.

Refer to the College regarding required advising for students on academic probation.

**P/N Grading Policy.** No more than 1/4 of all undergraduate credits may be P/NC, except those courses offered P/NC only.

**Residency:** A minimum of 50 percent of the credits for a major or minor in Automotive Engineering Technology must be taken at MSU.

Prerequisites and co-requisites must be observed. A flow chart of prerequisites is available at the Department Office.

The scheduling of all department courses is done yearly, based on enrollment and staffing. To obtain a current yearly class schedule, contact the Department.

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### COURSE DESCRIPTIONS

#### **102 (1) Introduction to Automotive Engineering Technology**

An overview of careers, technology and requirements for individuals interested in Automotive Engineering Technology. Hands-on experience is gained in a variety of new technologies. Careers in engineering technology are examined along with professional organizations and ethics. This course is intended as the first step toward an automotive career.

#### **160 (4) Automotive Systems**

The theory and maintenance of the modern automobile and automotive design. Covers major automotive systems including: engine cycle operation, lubrication system, cooling system, electrical system, transmissions, brakes, and chassis. Basic diagnosis and repair procedures are also

covered. A group vehicle design project is included. Lectures and demonstrations cover the course topics and labs allow students to gain hands-on experience.

#### **161 (4) Automotive Driveability and Diagnosis**

The diagnosis of automotive engine problems using a systems approach along with detailed troubleshooting procedures and specific test equipment. Test equipment used in the course includes: Fuel Analysis Testing Equipment; Fuel Injection Testing Equipment; Exhaust Gas Analyzers; Compression, Vacuum, and Leakage Testers; Ignition Oscilloscopes; Timing Lights; Engine Analyzers; Crack Detection Equipment; Measuring Tools.

Pre: AET 160

#### **262 (4) Automotive Computers and Electronics**

Theory and diagnostic procedures related to modern automobile electrical and electronic management systems. Major emphasis involves the computer as used in today's cars to control the ignition, fuel, emission control, body, and chassis system. Programmable engine management systems are introduced. Hands-on experience on diagnosis is provided.

Pre: AET 161, EET 113 Coreq: COMS 171

#### **264 (4) Vehicle Testing and Chassis Design**

The theory and design of chassis systems in addition to the evaluation of such designs. The chassis dynamometer as a research and certification tool. Determination of load, road load testing, and power testing. Emissions and fuel economy measurement. Emphasis placed on Federal Emission Testing, IM 240, OBD II, and State I/M programs.

Pre: AET 161, Coreq: COMS 171

#### **334 (3) Fluid Power**

Course provides a fundamental understanding of the physical principles of fluid power, along with a practical working knowledge of the components utilized in designing, installing, operating, and maintaining hydraulic and pneumatic power systems.

Pre: MATH 121, PHYS 211

#### **365 (2) Automotive Laboratory**

The course is designed to provide experience in a vehicle research laboratory. Topics will include laboratory supervision and maintenance, the configuration of data acquisition equipment, the calibration procedures of dynamometers, air flow meters and emissions analyzers and record keeping methods. A group research project will be conducted in the class. Enrollment is limited. Sign up at least one year ahead.

Pre: AET 262

#### **366 (3) Automotive Thermodynamics**

The study of thermodynamics and engine theory. Static and dynamic engine measurements along with a technical study of the engine's mechanical, ignition, fuel, cooling and lubrication systems. Engine performance simulation is included.

Pre: AET 161 Coreq: MATH 121, CHEM 105

#### **378 (3) Composite Materials**

Fiber reinforced plastic composite materials used in the



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## Automotive Engineering Technology

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manufacturing and transportation industries are the focus of this course. Matrix and reinforcement materials are examined and their properties identified. Manufacturing methods, fabrication, assembly techniques, testing, repair, and design of composite products are covered.

Coreq: MET 177, MET 322

### 435 (1-4) Automotive Design and Construction

Involves designing and building of prototype vehicles. Topics include: vehicle design decisions, rules, budgets, chassis design, body and aerodynamics, drivetrain choices, construction techniques, and test procedures. An actual experimental car will be built in this class. May be repeated.

### 468 (3) Automotive Research and Design

Automotive research techniques and equipment form the basis for this course. Environmental measurement, air flow testing, engine dynamometer testing, and vehicle performance measurement are covered. Emphasis is placed on research procedures, data acquisition and interpretation, and technical report writing. Current research projects from the automotive industry are also examined.

Pre: AET 366

### 488 (1) Senior Design I

An examination of automotive design and research along with topics such as ethics, professionalism, measurement, statistics, and career development/ placement. This course also prepares the student for AET 489, Senior Design Project II, where the design proposal, design project and final report are completed. This course must be taken in the spring semester during the junior year.

Coreq: STAT 154

### 489 (2) Senior Design II

A continuation of AET 488.

Pre: AET 468, 488, ENG 271

### 492 (1-4) Automotive Seminar

Selected automotive topics.

### 497 (1-10) Internship: Automotive

Automotive work experience in an area pertinent to the student's objective. Consent of internship coordinator required prior to the beginning of employment and registration. Typically done between the junior and senior year

Pre: 50% of major

### 499 (1-4) Individual Study

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## Aviation

*College of Education*

*Department of Aviation and Business Education*

107 Armstrong Hall • 507-389-6116

Chair: John Roberts

Joel Patrick McKinzie, Roger Kontak

The objective of the aviation program is to prepare students for responsible positions in the air transportation industry, including airline operations and management, corporate aviation, airport management and government

operations. The goal of the program is to equip students with adequate knowledge and skills in aviation and management in order to compete in the rapidly changing and highly competitive field of aviation.

**Admission to Major** Students may begin flight training and enroll in 100/200 level aviation courses prior to admission to major. Electronic admission is available in AH 119. Transfer students should submit a copy of their transfer credit evaluation form. Students must meet the following requirements:

- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.00 (C).

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### AVIATION BS

#### **Required for Major (Aviation Core, 25 credits):**

AVIA	100	World of Aviation (3)
AVIA	150	Private Pilot (4)
AVIA	151	Private Pilot Flight Lab (3)
AVIA	250	Commercial Pilot (3)
AVIA	260	Instrument Pilot (4)
AVIA	334	Aviation Management (4)
AVIA	437	Aviation Safety (4)

#### **Required for Major (Aviation Electives, 12 credits):**

Choose 4 courses from the following:

AVIA	333	Airline Operations (3)
AVIA	336	Basic Avionics and Mechanics (3)
AVIA	343	Airport Management (3)
AVIA	432	Aviation Law (3)
AVIA	435	Aviation Insurance (3)
AVIA	436	Advanced Flight Operations (3)
AVIA	438	Flight Engineers Ground School (3)
AVIA	440	Regional Airlines Operations (3)
AVIA	442	Air Traffic Control (3)
AVIA	443	Airline Dispatch (3)
AVIA	445	Aviation Resource Management (3)
AVIA	450	Airline Transport Pilot (3)

**Required for Major (40 credits): Choose Professional Flight or Aviation Management option below:**

### **PROFESSIONAL FLIGHT OPTION I**

#### **Required for Option (AVIA Electives, 10 credits):**

Choose 10 credits from the choices listed:

AVIA	251	Commercial Pilot Flight Lab (3)
AVIA	261	Instrument Pilot Flight Lab (3)
AVIA	371	Multi Engine Lab (1)
AVIA	380	Flight Instructors (3)
AVIA	381	Flight Instructor Flight Lab (1)
AVIA	382	Multi Engine Instructor Flight Lab (1)
AVIA	391	Instrument Flight Instructor Flight Lab (1)
AVIA	451	Airline Transport Pilot Flight Lab (2)

#### **Required Focus Area (30 credits):**

Students may complete business foundation courses (below) or an approved minor offered from any university department. When students complete a minor in lieu of business foundation courses, the balance of the required 30 credits may be aviation electives, internship, or individual study.



## AVIATION MANAGEMENT OPTION II (Aviation Management \*10 credits):

AVIA	497	Aviation Internship (1-10)
AVIA	499	Individual Study in Aviation (1-10)
Additional Aviation Electives		

## Required Focus Area for Aviation Mgmt. (Business Foundation courses 30 credits)

Students must complete all Business Foundation Courses listed below:

ACCT	200	Financial Accounting (3)
ACCT	210	Managerial Accounting (3)
BLAW	200	Legal, Political and Regulatory Environment of Business (3)
ECON	201	Principles of Macroeconomics (3)
ECON	202	Principles of Microeconomics (3)
BED	345	Business Communications (3)
MRKT	310	Principles of Marketing (3)
MGMT	330	Principles of Management (3)
FINA	362	Business Finance (3)
IBUS	380	Principles of International Business (3)

**Required Minor: None.**

## AVIATION MANAGEMENT MINOR

### Required for Minor (Core, 14 credits):

AVIA	150	Private Pilot (4)
AVIA	151	Private Pilot Flight Lab (3)
AVIA	250	Commercial Pilot (3)
AVIA	260	Instrument Pilot (4)

### Required Electives (10 credits):

Choose 10 credits from the following:

AVIA	251	AVIA	261	AVIA	333
AVIA	336	AVIA	343	AVIA	371
AVIA	432	AVIA	435	AVIA	436
AVIA	438	AVIA	441	AVIA	442
AVIA	443				

## POLICIES/INFORMATION

**Flight Lab:** Flight lab completion requires evaluation by aviation faculty. Flight costs are determined on an hourly basis for aircraft and flight instruction. To obtain FAA certifications requires FAA exams which may require a fee.

**Transfer of college credit and credit for certificates and/or ratings:** The Minnesota State University Department of Aviation bases its flight education philosophy in a four-year university degree. Consequently, students who have obtained flight certificates/ratings without earned college credit may not have satisfied the academic and flight requirements for the aviation major. Students must demonstrate that they have received the full breadth and depth of knowledge, skills abilities, and attitudes consistent with an education received at MSU. Once enrolled at MSU, students are expected to complete all subsequent flight training within MSU's aviation program.

**Transfer credits:** To satisfy aviation curriculum requirements students with pilot certificates and ratings earned with college credit through a Council on Aviation Ac-

creditation (CAA) accredited university may transfer those credits without demonstration of proficiency. College credits obtained through a non CAA accredited institution will be reviewed by the Department of Aviation to ensure the issuing institution follows policies and practices consistent CAA accreditation standards. In the event credits do not transfer, students may be required to follow Credit for Experience procedures.

**Prior Experience:** Students entering MSU with completed FAA certificates must register for and complete the requirements for the applicable ground school and flight lab courses. Prior flight experience will be evaluated by the faculty and may result in advanced standing in flight labs. Students are responsible for aircraft rental required for the evaluation.

**GPA Policy.** Admission to College of Education, 2.0.

**P/N Grading Policy.** Only elective and general education courses may be taken P/N, unless offered P/N only.

## COURSE DESCRIPTIONS

### 100 (3) World of Aviation

A study of how aviation fits into our modern world, relation to business, and contribution to the economy. Study of aviation as a visible alternative in transportation. F, S

### 150 (4) Private Pilot

A study of basic aeronautical knowledge including principals of flight, aerodynamics, aviation regulations, weather, visual and instrument navigation, and emergencies. The course meets, but is not limited to, FAR part 61.105 (a, 1-6). Satisfactory completion of this course may result in an endorsement for the FAA Private Pilot written exam. F, S

### 151 (3) Private Pilot Flight Lab

Provides beginning flight student with the in-flight requirements needed to obtain the FAA Private Pilot's Certificate. F, S

### 250 (3) Commercial Pilot

A study of advanced aeronautical knowledge, including aerodynamics, aviation regulations, weather, visual and instrument navigation, and emergencies. The course meets, but is not limited to, FAR part 61.125 (a, 1-4). Satisfactory completion of this course may result in an endorsement for the FAA Commercial Pilot written exam. Pre: AVIA 150, or equivalent F, S

### 251 (3) Commercial Pilot Flight Lab

Prepares advanced flight students with the in-flight requirements needed to obtain the FAA Commercial Pilot's Certificate. Pre: AVIA 151, or equivalent F, S

### 260 (4) Instrument Pilot

A study of the aeronautical knowledge including aviation regulations, weather, instrument navigation, and instrument emergencies. The course meets, but is not limited to, FAR part 61.65 (b, 1-4). Satisfactory comple-

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## Aviation

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tion of this course may result in an endorsement for the FAA Instrument Pilot written exam.

Pre: AVIA 150, or equivalent F, S

### **261 (3) Instrument Pilot Flight Lab**

Prepares advanced flight students with the in-flight requirements needed to obtain the FAA Instrument Pilot rating.

Pre: AVIA 151, or equivalent F, S

### **333 (3) Airline Operations**

Designed to cover the complex area of operation techniques and problems confronting the airlines today. Entails a study of marketing research, passenger trends, feasibility route studies, etc.

F, S

### **334 (4) Aviation Management**

Provides an understanding of management and financial techniques related to aviation businesses. Generally accepted and proven business techniques and proven business techniques are applied to the aviation setting.

F, S

### **336 (3) Basic Avionics and Mechanics**

Trains the student in the basic radio and navigation procedures, components, and electronic technology. The student also gains an understanding of aircraft engines and systems.

F

### **343 (3) Airport Management**

Provides an understanding of management and operations techniques related to airports. Aspects of design, finance, planning and public relations are emphasized. S

### **371 (1) Multi-Engine Flight Lab**

Prepares advanced flight student with the in-flight requirements needed to obtain the FAA Multi-Engine Pilot rating.

Pre: AVIA 151, or equivalent F, S

### **380 (3) Flight Instructor**

A study of the fundamentals of instruction including the learning process, effective teaching evaluation, course development, lesson planning, and instructing techniques. The course meets, but is not limited to, FAR part 61.187 (a, 1-6). Satisfactory completion of this course may result in an endorsement for the FOI and CFI-A written exam.

Pre: AVIA 150 and 260, or equivalent F, S

### **381 (1) Flight Instructor Flight Lab**

Prepares advanced flight students with the in-flight requirements needed to obtain the FAA Certified Flight Instructor's Certificate.

Pre: AVIA 251 and 261, or equivalent F, S

### **382 (1) Multi-Engine Instructor Flight Lab**

Prepares advanced flight students for the in-flight requirements needed to obtain the FAA Multi-Engine Flight Instructor's Certificate.

Pre: AVIA 251 and 261, or equivalent F, S

### **391 (1) Instrument Instructor Flight Lab**

Prepares advanced flight students with the in-flight requirements needed to obtain the FAA Instrument Flight Instructor's Certificate.

Pre: AVIA 251 and 261, or equivalent F, S

### **432 (3) Aviation Law**

To instruct the student relative to legal implications of aircraft ownership, leases, rentals, and overall aircraft operation. Emphasis is placed on the understanding of liability and negligence from the operator and pilot standpoints.

S

### **435 (3) Aviation Insurance**

Identifies the various rudiments of insurance related to aircraft and airport operations including basic insurance principles, non-ownership pilot liability exposures, aircraft hull consideration, fleet insurance and premium costs.

S

### **436 (3) Advanced Flight Operations**

Introduces advanced flight students to the systems and techniques used in high performance and turbine aircraft. Emphasis is on aircraft systems and high altitude flight operations.

### **437 (4) Aviation Safety**

The understanding and implementation of safe operating procedures. Assists the student in arriving at proper decisions related to periods of stress when operating as pilot in command. Various FAA regulations and standard and safe operating procedures are also discussed.

F

### **438 (3) Flight Engineer**

Provides students with the knowledge necessary to pass the FAA flight engineers written exam.

F

### **440 (3) Regional Airline Operations**

Introduces the management and operation of a regional airline including regulatory concerns. Also introduces complex aircraft systems found on the typical regional airline aircraft.

F, S

### **442 (3) Fundamentals of Air Traffic Control**

To provide the student with the basic knowledge of ATC as a career and the fundamentals necessary for FAA certification.

F

### **443 (3) Airline Dispatch**

Introduces the workings of the complex system of air control in the US and abroad. Covers such subjects as radio communications, airspace classification, radar control, and operation as well as aircraft separation. Looks at present and future air traffic control systems.

S

### **445 (3) Aviation Resource Management**

A study of various techniques designed to enhance management and leadership methods. Emphasizes decision-making and judgment skills as well as methods to improve effective communication and skills to develop a productive work environment for flight crew and other airline personnel.

F

### **450 (3) Airline Transport Pilot**

Introduces the technical training required for the operation of large aircraft in airline service. Provide knowledge to pass the FAA written test for Airline Transport Pilot Certificate.

F

### **451 (2) Airline Transport Pilot Flight Lab**

Prepares students who desire careers as professional pi-

lots. Emphasizes complete ground tutoring and flight instruction relating to instrument maneuvers, regulation interpretation, pilot discipline and professional procedures.

F, S

**490 (1-10) Aviation Workshop**

V

**497 (1-12) Aviation Internship**

Supervised experience in business, industry, state or federal institutions.

F, S

**499 (1-6) Individual Study in Aviation**

Allows the student an individual course of study on an aviation topic to be arranged with the department. This course will be writing intense.

F, S

## Biochemistry

*College of Science, Engineering and Technology*

*Department of Chemistry & Geology*

242 Trafton Science Center N • 507-389-1963

Chair: Jeffrey R. Pribyl

Brian Groh, Michael J. Lusch, Marie K. Pomije, James Rife, Theresa Salerno, John Thoemke

Biochemistry is a discipline which encompasses both biology and chemistry. This rapidly expanding science focuses on the study of the molecular aspects of living organisms. The tools and concepts of biochemistry are important as a foundation for careers in many areas of research and in medicine. Students considering a BA or BS degree in biochemistry should consult the biochemistry advisor for specific information regarding the program.

**Admission to Major.** Admission to a program is necessary before a student can enroll in 300- and 400-level courses. To be eligible for admission to the biochemistry program a student must have declared biochemistry as a first major, completed 32 credits, including BIOL 105 and 106 as well as CHEM 201 and 202 and achieved a minimum grade point average of 2.0. Students should also have an assigned biochemistry advisor with whom they have discussed the program. Applications for admission to the biochemistry program are available in the department office.

### BIOCHEMISTRY BA

**Required for Major (Support Courses, 19 credits):**

BIOL	105	General Biology I (4)
BIOL	106	General Biology II (4)
BIOL	211	Genetics (3)
BIOL	270	Microbiology (4)
BIOL	479	Molecular Biology (4)

**Required for Major (Core, 34 credits):**

CHEM	201	General Chemistry I (5)
CHEM	202	General Chemistry II (5)
CHEM	305	Analytical Chemistry (4)
CHEM	320	Organic Chemistry I (with lab) (5)
CHEM	321	Organic Chemistry II (2)
CHEM	331	Organic Chemistry II Lab (1)

CHEM	460	Biochemistry I (3)
CHEM	461	Biochemistry II (3)
CHEM	465	Biochemical Techniques I (1)
CHEM	466	Biochemical Techniques II (2)
CHEM	474	Chromatography (2)
CHEM	495	Senior Seminar (1)

**Required Electives (9 credits):**

Choose a minimum of 9 credits with approval from the advisor:

BIOL	300/400	Elective
BIOL	300/400	Elective
BIOL	300/400	Elective

**Required for Bachelor of Arts (BA) degree ONLY:**  
Language (8)

**Required Minor: None.**

### BIOCHEMISTRY BS

**Required General Education (4 credits):**

BIOL	105	General Biology I (4)
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**Required Support Courses (30-33 credits):**

BIOL	106	General Biology II (4)
BIOL	211	Genetics (3)
BIOL	270	Microbiology (4)
BIOL	479	Molecular Biology (4)
PHYS	211	Principles of Physics I (4) <b>and</b>
PHYS	212	Principles of Physics II (4) <b>or</b>
PHYS	221	General Physics I (5) <b>and</b>
PHYS	222	General Physics II (5)

Choose a minimum of 7 credits from the following:

MATH	121	Calculus I (4)
MATH	122	Calculus II (4)
STAT	154	Elementary Statistics (3)

**Required for Major (Core, 40 credits):**

CHEM	201	General Chemistry I (5)
CHEM	202	General Chemistry II (5)
CHEM	305	Analytical Chemistry (4)
CHEM	320	Organic Chemistry I (with lab) (5)
CHEM	321	Organic Chemistry II (2)
CHEM	331	Organic Chemistry II Lab (1)
CHEM	440	Physical Chemistry I (3)
CHEM	450	Physical Chemistry Lab I (1)
CHEM	460	Biochemistry I (3)
CHEM	461	Biochemistry II (3)
CHEM	465	Biochemical Techniques I (1)
CHEM	466	Biochemical Techniques II (2)
CHEM	474	Chromatography (2)
CHEM	495	Senior Seminar (1)
CHEM	498	Undergraduate Research (2)

**Required Electives (Chemistry or Biology, 8 credits):**

Choose a minimum of 8 credits with approval from the biochemistry advisor:

CHEM/BIOL	300/400	Elective
CHEM/BIOL	300/400	Elective
CHEM/BIOL	300/400	Elective

**Required Minor: None.**

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## Biochemistry

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### POLICIES/INFORMATION

The first year of coursework for biochemistry majors should include two semesters of chemistry (201, 202), two semesters of biology (105, 106) and one semester of mathematics (selection of course depends on mathematics background). Organic Chemistry should be taken during the second year. It is important for majors to take the biochemistry sequence during the third year. Participation in chemistry seminar is required of all majors.

**GPA Policy:** Students obtaining a major in biochemistry must maintain an overall GPA of 2.0 with no more than 5 credits of D work in chemistry or biochemistry courses.

**P/N Grading Policy:** Courses leading to a major or minor in chemistry or biochemistry may not be taken on a P/N basis, except where P/N grading is mandatory.

The department is recognized by the American Chemical Society and offers a B.S. (Chemistry) major that is approved by that organization. Anyone considering a chemistry or biochemistry major or minor should choose a departmental faculty member as an advisor and consult that advisor often throughout the course of study.

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## Biology

*College of Science, Engineering & Technology*  
*Department of Biological Sciences*

242 Trafton Science Center S • 507-389-2786

Web site: [www.mnsu.edu/dept/biology](http://www.mnsu.edu/dept/biology)

Chair: Gregg Marg, Ph.D.

Daryl Adams, Ph.D., Michael Bentley, Ph.D., Bill Bessler, Ed.D., Christopher Conlin, Ph.D., Marilyn Hart, Ph.D., Keith Klein, Ph.D., Penny Knoblich, DVM, Ph.D., John D. Krenz, Mark Lyte, Ph.D., John D. Madsen, Ph.D., Alison Mahoney, Brock R. McMillan, Ph.D., Steven Mercurio, Ph.D., Donovan Nielsen, Ph.D., Beth Proctor, Ph.D., Christopher Ruhland, Ph.D., Edward Williams, Ph.D., Dorothy Wrigley, Ph.D.

The Department of Biological Sciences offers programs for students preparing for careers in education, laboratory and field research, biotechnology, environmental sciences, clinical laboratory sciences, cytotechnology, food science technology and pre-professional programs including pre-agriculture, pre-forestry, pre-medicine, and pre-veterinary medicine.

The biology major offers a core program intended to develop a common background in biology and additional upper level courses designed to provide specialized options. Students typically take a broad based general biology major or an emphasis in one of the following: general biology, bio-business, cytotechnology, ecology, human biology, microbiology, physiology, plant science, toxicology, or zoology. Programs in biotechnology, environmental sciences, food science technology and science teaching are also offered.

**Admission to Major** is granted by the department. Admission requirements are 32 earned semester credit hours including BIOL 105 and 106, with a grade of a "C" or better in both BIOL 105 and 106; and a minimum cumulative GPA of 2.00.

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### BIOLOGY BA (40 credits)

#### Required for Major (Core, 21-25 credits):

BIOL 105	General Biology I (4)
BIOL 106	General Biology II (4)
BIOL 211	Genetics (3)

Choose two courses from the following:

BIOL 215	General Ecology (4)
BIOL 270	Microbiology (4)

one physiology course [Biol 230(4), Biol 431 (3), Biol 441 (4), or Biol 476 (5)]

Choose one course from the following:

BIOL 230	Human Physiology (4)
BIOL 320	Cell Biology (4)
BIOL 431	Comparative Animal Physiology (3)
BIOL 441	Plant Physiology (4)
BIOL 476	Microbial Physiology and Genetics (5)

#### Required Electives for Major (Biology, 19-22 credits):

Choose 19-22 credits of electives in consultation with an advisor.

#### Required for Bachelor of Arts (BA) degree ONLY:

Language (8)

#### Required Minor: Yes. Chemistry

### BIOLOGY BS

Students may elect to complete the general non-specialized biology major or select one of the alternative specialized options or emphases.

#### **GENERAL, NON-SPECIALIZED OPTION** (40 credits)

#### Required for Option (Core, 20-21 credits):

BIOL 105	General Biology I (4)
BIOL 106	General Biology II (4)
BIOL 211	Genetics (4)

Choose two courses from the following:

BIOL 215	General Ecology (4)
BIOL 320	Cell Biology (4)

One physiology course [Biol 230 (4), Biol 431 (4), Biol 441 (4), or Biol 476 (5)]

#### Required Electives (5-8 credits):

Choose two courses from the following:

BIOL 301	BIOL 316	BIOL 403
BIOL 408	BIOL 418	BIOL 430
BIOL 435	BIOL 436	BIOL 442
BIOL 443	BIOL 451	BIOL 452

Additional upper division electives:

Choose additional Biology 300-400 level courses to total 40 credits in this option.

#### Required Minor: Yes. Chemistry.

#### **BIOBUSINESS OPTION** (40 credits)

## Required for Option (credits vary):

A student may choose the Biology BA or any BS option or program to satisfy the BioBusiness option.

## Required (Chemistry, 10 credits):

A minimum of one year of chemistry is required.

## Required Minor: Yes. Any Business Minor.

## CYTOTECHNOLOGY OPTION (85 credits)

### Required for Option (Core, 48 credits):

Choose 30 credits from the following:

BIOL 105	General Biology I (4)
BIOL 106	General Biology II (4)
BIOL 211	Genetics (3)
BIOL 220	Human Anatomy (4)
BIOL 230	Human Physiology (4)
BIOL 270	General Microbiology (4)
BIOL 320	Cell Biology (4)
BIOL 420	Diagnostic Parasitology (3)
BIOL 434	Development & Human Embryology (3)
BIOL 435	Histology (4)

Choose 18 credits from the following:

CHEM 201	General Chemistry I (5)
CHEM 202	General Chemistry II (5)
CHEM 305	Analytical Chemistry (4)
CHEM 320	Organic Chemistry I (5)
CHEM 360	Principles of Biochemistry (4)

### Required Elective (4 credits):

MATH 112 or any higher numbered math course listed in General Education Category 4.

### Professional Education (32 credits):

Clinical Internship at Mayo

## ECOLOGY OPTION

### Required General Education (13 credits):

BIOL 105	General Biology I (4)
PHYS 211	Principles of Physics I (4)
CHEM 201	General Chemistry I (5)

### Recommended Support Courses (12 credits):

COMS 100	Introduction to Computer Science (4)
MATH 121	Calculus I (4)
ENG 271	Technical Communication (4)

### Required Support Courses (8 credits):

Choose one:

CHEM 111	Chemistry of Life Processes (5)
CHEM 202	General Chemistry II (5)

Choose one:

STAT 154	Elementary Statistics (3)
HLTH 475	Biostatistics (3)

### Core Courses (28-30 credits required):

BIOL 106	General Biology II (4)
BIOL 211	Genetics (3)
BIOL 215	General Ecology (4)
BIOL 301	Evolution (2)
BIOL 408	Vertebrate Ecology (4)
BIOL 412	Soil Ecology (4)
BIOL 443	Plant Ecology (4)

Choose one letter:

- a) BIOL 320 Cell Biology (4)
- b) BIOL 431 Comparative Animal Physiology (3)
- c) BIOL 217 Plant Science (3) and  
BIOL 441 Plant Physiology (4)
- d) BIOL 270 Microbiology (4) and  
BIOL 476 Microbial Physiology and Genetics (5)

### Elective Courses (2-8 credits required)

BIOL 403	BIOL 436	BIOL 492#
BIOL 404	BIOL 442	BIOL 497#
BIOL 409	BIOL 460	BIOL 499#
BIOL 410	BIOL 472	and others by
BIOL 432	BIOL 479	consent of advisor.

#Limit of 4 credits total from these courses.

### Required Minor: Related area approved by advisor.

## HUMAN BIOLOGY OPTION (39-41 credits)

### Required Support Courses (15-18 credits):

Calculus - one semester  
Physics - one year  
Computer Science - one course

### Required for Option (Core, 26-27 credits):

BIOL 105	General Biology I (4)
BIOL 106	General Biology II (4)
BIOL 220	Human Anatomy (4)
BIOL 230	Human Physiology (4)
BIOL 211	Genetics (3)
BIOL 320	Cell Biology (4)

Choose one course from the following:

BIOL 270	Microbiology (4)
BIOL 217	Plant Science (3)

### Required Electives (13-14 credits):

Choose electives from the following to total 40 credits in Biology:

BIOL 316*	BIOL 324	BIOL 410
BIOL 417	BIOL 418	BIOL 420*
BIOL 430*	BIOL 433*	BIOL 434
BIOL 435*	BIOL 438	BIOL 452*
BIOL 460	BIOL 466	BIOL 474*
BIOL 475*	BIOL 479*	BIOL 497*#
BIOL 498*#	BIOL 499#	

\* Choose at least one course from these courses

# Choose a maximum of 4 credits from these courses

### Required Minor: Yes. Chemistry.

## MICROBIOLOGY OPTION (42-43 credits)

### Required General Education for Option (4 credits):

MATH 112	College Algebra (4)
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### Required for Option (Core, 18-19 credits):

BIOL 105	General Biology I (4)
BIOL 106	General Biology II (4)
BIOL 211	Genetics (3)
BIOL 270	General Microbiology (4)

Choose one course from the following:

BIOL 215	General Ecology (4)
BIOL 217	Plant Science (3)
BIOL 230	Human Physiology (4)
BIOL 320	Cell Biology (4)



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## Biology

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### Required Electives (20 credits):

Choose electives from the following to total 40 credits in Biology:

BIOL 420	BIOL 452	BIOL 472
BIOL 474	BIOL 475	BIOL 476
BIOL 478	BIOL 479	BIOL 497
BIOL 499		

### Required Minor: Yes. Chemistry.

### **PHYSIOLOGY OPTION** (48-50 credits)

#### Required General Education (11-12 credits):

BIOL 105	General Biology I (4)
MATH 121	Calculus I (4) <b>or</b>
STAT 154	Elementary Statistics (3)
PHYS 211	Principles of Physics I (4)

#### Required Support Courses (7 credits):

BIOL 106	General Biology II (4)
CHEM 460	Biochemistry I (3)

#### Required for Option (Core, 21 credits):

BIOL 211	Genetics (3)
BIOL 230	Human Physiology (4)
BIOL 320	Cell Biology (4)
BIOL 431	Comparative Animal Physiology (3)
BIOL 441	Plant Physiology (4)
BIOL 460	Introduction to Toxicology (3)

#### Required Electives (9-10 credits):

Choose at least 9 credits from the following courses:

BIOL 324	BIOL 433	BIOL 438
BIOL 466	BIOL 479	BIOL 499

### Required Minor: Yes. Chemistry.

### **PLANT SCIENCE OPTION** (69 credits)

#### Required General Education (13 credits):

BIOL 105	General Biology I (4)
PHYS 211	Principles of Physics I (4)
CHEM 201	General Chemistry I (5)

#### Recommended Support Courses (12 credits):

ENG 271	Technical Communication (4)
COMS 100	Introduction to Computer Science (4)
MATH 121	Calculus I (4)

#### Required Support Courses (8 credits):

Choose one:

CHEM 111	Chemistry of Life Processes (5)
CHEM 202	General Chemistry II (5)

Choose one:

STAT 154	Elementary Statistics (3)
HLTH 475	Biostatistics (3)

#### Required Core (23 credits):

BIOL 106	General Biology II (4)
BIOL 211	Genetics (3)
BIOL 215	General Ecology (4)
BIOL 217	Plant Science (3)
BIOL 441	Plant Physiology (4)
BIOL 442	Plant Taxonomy (4)

### Required Electives (13 credits required)\*:

BIOL 403	BIOL 404	BIOL 410
BIOL 412	BIOL 414	BIOL 432
BIOL 440	BIOL 443	BIOL 445
BIOL 446	BIOL 451	BIOL 460
BIOL 479	BIOL 492*	BIOL 497*
BIOL 499		

\*Electives must include a minimum of two laboratory courses with a laboratory component

#Limit of 4 credits total from these courses

### Required Minor: Related area approved by advisor

### **TOXICOLOGY OPTION** (67 credits)

#### Required General Education (17 credits):

BIOL 105	General Biology I (4)
CHEM 201	General Chemistry I (5)
PHYS 211	Principles of Physics I (4)
MATH 121	Calculus I (4)

#### Required for Major (Support Courses, 32 credits):

BIOL 106	General Biology II (4)
CHEM 202	General Chemistry II (5)
CHEM 305	Analytical Chemistry (4)
CHEM 320	Organic Chemistry I (5)
CHEM 321	Organic Chemistry II (2)
CHEM 460	Biochemistry I (3)
CHEM 461	Biochemistry II (3)
CHEM 465	Biochemical Techniques I (1)
CHEM 466	Biochemical Techniques II (2)
HLTH 475	Biostatistics (3)

#### Required for Option (Core, 35 credits):

BIOL 211	Genetics (3)
BIOL 215	General Ecology (4)
BIOL 230	Human Physiology (4)
BIOL 270	Microbiology (4)
BIOL 460	Introduction to Toxicology (3)
BIOL 461	Environmental Toxicology (4)
BIOL 462	Toxicology Seminar (1)
BIOL 464	Methods of Applied Toxicology (3)
BIOL 465	Applied Toxicology Project (3)
BIOL 466	Principles of Pharmacology (3)
BIOL 467	Industrial Hygiene (3)

### Required Minor: None.

### **ZOOLOGY OPTION** (57 credits)

#### Required General Education (13 credits):

BIOL 105	General Biology I (4)
CHEM 201	General Chemistry I (5)
PHYS 211	Principles of Physics I (4)

#### Recommended Support Courses (8 credits):

COMS 100	Introduction to Computer Science (4)
MATH 121	Calculus I (4)

#### Required Support Courses (8 credits):

Choose one:

CHEM 111	Chemistry of Life Processes (5)
CHEM 202	General Chemistry II (5)

Choose one:

STAT 154	Elementary Statistics (3)
HLTH 475	Biostatistics (3)



**Required Core (26 credits):**

BIOL	106	General Biology II (4)
BIOL	211	Genetics (3)
BIOL	215	General Ecology (4)
BIOL	301	Evolution (2)
BIOL	316	Animal Diversity (3)
BIOL	421	Entomology (3)
BIOL	431	Comparative Animal Physiology (3)
BIOL	436	Animal Behavior (4)

**Electives (10 credits required):**

BIOL	320	BIOL	324	BIOL	403
BIOL	408	BIOL	409	BIOL	410
BIOL	412	BIOL	420	BIOL	434
BIOL	435	BIOL	438	BIOL	460
BIOL	472	BIOL	479	BIOL	492#
BIOL	497#	BIOL	499#		

and others by consent of advisor.

#Limit of 4 credits total from these courses.

**Required Minor: Yes, related area approved by advisor.**

**LIFE SCIENCE TEACHING BS**

See the SCIENCE TEACHING section of this bulletin.

**BIOLOGY MINOR****Required for Minor (Core, 17 credits):**

BIOL	105	General Biology I (4)
BIOL	106	General Biology II (4)
BIOL	211	Genetics (3)
Choose one course from the following:		
BIOL	215	BIOL 217 BIOL 220
BIOL	270	

**Additional Elective :**

Any 200 level or above course to total 17 credits in the minor.

**POLICIES/INFORMATION**

**P/N Grading Policy:** All courses leading to a major or a minor in biology must be taken for letter grades. Any exception to this policy must be approved by the chairperson of the department.

Refer to the College regarding required advising for students on academic probation.

**GPA Policy:** In programs where not specifically noted, a minimum GPA of 2.0 must be maintained in biological sciences. A minimum GPA of 2.6 in the sciences must be maintained to meet student teaching requirements.

Several biology scholarships are available for entering freshmen and currently enrolled MSU students who meet the requirements. Application deadline is March 31 of each year.

The Department of Biological Sciences offers a well-balanced summer school program. For details concerning the courses being offered consult the summer bulletin.

**COURSE DESCRIPTIONS****100 (4) Our Natural World**

Introductory course designed for students not majoring in science. Focuses on basic biological principles with special emphasis on the human species. Includes scientific problem solving, biodiversity, human and social aspects of biology, ecology, cellular processes and organ function, human reproduction, pre-natal development, and heredity. Lecture, laboratory, and small group discussions. F, S

**101 (2-4) Biological Perspectives**

Students focus on specific biological perspectives, including environmental science, biology of women, biotechnology, human heredity, etc. May be repeated for credit under different sub-titles. F, S

**102 (3) Biology of Women**

An introduction to biological topics of special interest to women with emphasis on anatomic and physiologic changes over the course of a woman's lifetime. Designed for students not majoring in science. Presents fundamental biologic concepts within this specialized context and provides opportunity to collect, evaluate, and analyze data. F, S

**103 (3) Introduction to Biotechnology**

An introductory course designed for students not majoring in science. Focuses on basic biological principles as applied to biotechnology. Includes basic natural science principles, scientific problem solving, and human and social aspects of biotechnology. Lecture, laboratory, and small group discussions. F

**105 (4) General Biology I**

Study of biological processes at the suborganismal level including cell chemistry, metabolism, reproduction, genetics, and complex tissue physiology. Laboratory and discussion sessions stress problem solving and experimental design. F, S

**106 (4) General Biology II**

Study of biological processes at the organismal level including a survey of life forms (viruses, bacteria, protists, fungi, plants, and animals), their evolution, and ecology. Laboratory and discussion sessions stress problem solving and experimental design.

Pre: BIOL 105 F, S

**175 (1) Orientation to Clinical Laboratory Science**

An introduction to the health care profession with special emphasis on clinical laboratory personnel. Course includes presentations by professionals in some of the major health care fields, especially medical technology. Includes lectures, field observations. S

**199 (3-4) CLEP Biology**

F, S

**201 (3) Ecology and Human Society**

Ecological principles as related to current environmental problems. Topics of current interest include energy, human demography, food productions, pollution, and social, political, and economic change. Primarily for general education and non-science majors. S

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## Biology

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### **211 (3) Genetics**

Introduction to genetic analysis. Topics covered include: crosses, linkage and mapping, Mendelian and Non-Mendelian inheritance, molecular genetics, genetic manipulation of organisms, population genetics and evolution. Pre: BIOL 105, 106, and MATH 112 F, S

### **215 (4) General Ecology**

Principles of the study of relationships between organisms and the environment. Topics include flow of energy and materials, organism-level interactions, growth and evolution of populations, and community ecology. Field trips to prairie, lake, stream, and forest communities, training in data collection and analysis, use of equipment, and report writing. Lab included. Pre: BIOL 105 and 106 or consent F

### **217 (4) Plant Science**

Biology of plants including unique features of plant cells, life histories, metabolism, anatomy, physiology, and ecology. The course empathizes plants' remarkable adaptations to their environments, their diversity, and the vital roles they play in ecological interactions. For biology and environmental science majors and minors. Lab included. Pre: BIOL 105 and 106 or consent S

### **220 (4) Human Anatomy**

Systems approach to the structure of the human body. The course is designed for students majoring in biology or health related programs. Lab included. F, S

### **230 (4) Human Physiology**

Function of living systems with emphasis on human species. Lab included. Pre: BIOL 220 and 1 semester of chemistry F, S

### **270 (4) Microbiology**

An introduction to the general principles and methods used in the study of microorganisms. Lab included. Pre: 1 BIOL course and 1 CHEM course F, S

### **301 (2) Evolution**

Evolution is a unifying theory of biology. Students are provided the history of evolutionary thought and the Darwinian revolution, evidence for evolution, mechanics of evolution, and an array of special topics such as speciation, molecular evolution, conservation, and extinction. Readings will include book chapters and journal articles. Lecture/discussion. Pre: BIOL 105, 106 S

### **316 (3) Animal Diversity**

A comprehensive phylogenetic survey of both invertebrate and vertebrate animals. Emphasis on evolutionary relationships among phyla, the evolution of organ systems, animal organization and function, animal adaptations, and zoogeographical considerations. Research and inquiry of animal unity and diversity will include using the Internet. Lab included. Pre: BIOL 105 and 106 F

### **320 (4) Cell Biology**

An examination of eukaryotic cellular structure, organization and physiology for students preparing careers in biology, medicine, and related fields. Topics include cell surface, intracellular compartments, cell junctions, cytoskeleton, cell motility, signal transduction mechanisms, energy flow and metabolism, information flow, protein sorting and transport, and common research techniques. Students will research on the Internet. Lab included. Pre: BIOL 105 and 106 F

ogy, medicine, and related fields. Topics include cell surface, intracellular compartments, cell junctions, cytoskeleton, cell motility, signal transduction mechanisms, energy flow and metabolism, information flow, protein sorting and transport, and common research techniques. Students will research on the Internet. Lab included. Pre: BIOL 105 and 106 F

### **324 (3) Neurobiology**

Basic anatomy and physiology of the nervous system. The course is designed for students majoring in biology, psychology or health related programs. Pre: BIOL 220 and 230 F

### **380 (3) Blood Banking/Urinalysis**

Basic understanding of the principles of immunohematology applied to the area of blood banking including major blood group systems, principles for antigen/antibody detection and identification, donor blood collection, transfusion evaluation, theory of renal function in health and disease, specimen collection, handling, and processing, and components of routine urinalysis. Pre: BIOL 230 S

### **403 (3) Conservation Biology**

Applications of principles from ecology, genetics, behavior, demography, economics, philosophy, and other fields to the conservation and sustainable use of natural populations of plants and animals. Lectures and discussions address topics such as habitat fragmentation, parks and reserves, genetic diversity, population viability, and extinction. Pre: BIOL 215 or consent S

### **404 (4) Wetlands**

To provide students the values and functions of wetlands and to use wetlands as an example of the relationship of ecology to management, and the impact that classification systems have politically. Lab (fieldwork) included. Pre: BIOL 105, 106, 215, or consent S

### **408 (4) Vertebrate Ecology**

A field course in the ecology of birds, mammals, amphibians, reptiles, and fishes. Students are trained in sampling techniques such as mark-and-recapture, population size estimation and monitoring, and species identification of live and preserved specimens. Lectures encompass evolution and adoption, origins, energetics, mating systems, morphology, geographical distributions, and population-level phenomena. Lecture and Laboratory. Pre: BIOL 105, 106, 215 or consent F

### **409 (4) Advanced Field Ecology**

A field course focused on the function and dynamics of various North American ecosystems. Emphases will be on natural history, critical thought, and experimental design. Students will be trained in a variety of soil, plant, and animal sampling techniques. Depending on enrollment, there may be additional costs (e.g., camping fees) for the course. Pre: BIOL 105, 106, 215 or consent S

**410 (3) Human Ecology**

The human species' place in the biological world, effects on various communities and potential methods of correcting the detrimental effects with economic and social implications.

Pre: BIOL 105, 106, 215, or consent S

**412 (4) Soil Ecology**

Soil ecology will focus on the genesis and classification of soils, the physical properties of soil as they relate to habitat formation, niches, interactions that exist among soil organisms, human impact on soil systems relative to population pressures and management practices. Lab included.

Pre: BIOL 105, 106, 215, or consent S

**417 (3) Biology of Aging and Chronic Diseases**

Emphasis is placed on the biomedical aspects of aging and chronic disease. The course is designed for students majoring in biology, gerontology programs, or other health related programs.

Pre: BIOL 100 or 105 F, S

**418 (4) Macro and Microscopic Imaging**

Properties and physical principles underlying biological images. The course provides a survey of macro-imaging techniques (such as x-ray tomography, magnetic resonance imaging, positron emission tomography, and ultrasound) and micro-imaging techniques (such as light microscopy, transmission and scanning electron microscopy, fluorescence microscopy, laser scanning confocal microscopy and atomic force microscopy).

Pre: One Year of Physics F

**419 (2-3) Special Topics in Instrumentation**

Instruction in specialized biological instrumentation.

Pre: BIOL 105 and 106 F

**420 (3) Diagnostic Parasitology**

Clinically important parasites. Protozoans, Flukes, Tapeworms, Roundworms, Ticks, Mites and Insects. Designed for Medical Technology, Pre-Med, Pre-Vet and Biology majors. Identification, clinical disease, epidemiology and ecology are covered. Lab included.

Pre: BIOL 100 or 105, BIOL 106 recommended S

**421 (3) Entomology**

Morphological, physiological, medical, and economic significance of insects.

Pre: BIOL 105 and 106 or consent ALT-F

**422 (2) General Principles of Cytology**

This course consists of a series of lectures, demonstrations, and laboratory sessions designed to teach the principles of cytology. This includes basic (ultra and light microscope) cell structures, cellular biology, including cell division and growth and general mechanisms of pathologic changes. Cytotechnology emphasis only.

F, S

**423 (4) Gynecologic Cytology**

This course involves a study of the normal and abnormal anatomy, physiology, histology, and cytology of the

female genital tract. Lectures, demonstrations, and laboratory sessions are given. Normal and abnormal cytology are emphasized. Non-neoplastic changes, such as hormonal abnormalities and inflammatory conditions are discussed. Cytotechnology emphasis only.

Permission required. F, S

**424 (3) Advanced Gynecologic Cytology**

This course is a continuation of Gynecologic Cytology to include malignant conditions of the endocervix, endometrium, ovary and vagina. Lectures will also be given on special topics including cytology of pregnancy and therapeutic changes. Cytotechnology emphasis only.

F, S

**425 (3) Pulmonary Cytology**

This course consists of a series of lectures, demonstrations, and laboratory sessions of the gross and microscopic anatomy, physiology, pathology, and cytology of the respiratory tract. Particular areas covered include benign conditions, inflammatory disorders, malignancies, and therapeutic effects. Cytotechnology emphasis only.

F, S

**427 (3) Urinary Cytology**

This course consists of a series of lectures, demonstrations, and laboratory sessions of the gross and microscopic anatomy, physiology, pathology, and cytology of the urinary tract. Areas covered include benign conditions, inflammatory disorders, malignancies, and therapeutic effects. Cytotechnology emphasis only.

Permission required. F, S

**428 (1) Gastrointestinal Cytology**

This course consists of a series of lectures, demonstrations, and laboratory sessions of the gross and microscopic anatomy, physiology, pathology, and cytology of the GI tract. Cytotechnology emphasis only.

Permission required. F, S

**429 (3) Body Cavity and Miscellaneous Secretion Cytology**

This course consists of a series of lectures, demonstrations, and laboratory sessions of the gross and microscopic anatomy, physiology, pathology, and cytology of the body cavity fluids (pleural, peritoneal, and pericardial) and other sites including the cerebrospinal fluid and eye. Cytotechnology emphasis only.

Permission required. F, S

**430 (4) Hematology/Introduction to Immunology**

Collection, examination, evaluation, morphology, function and diseases of blood cells. Hemostasis/coagulation of blood. Immunology theory is presented. Lab included.

Pre: BIOL 230 S

**431 (3) Comparative Animal Physiology**

A comparison of adaptation mechanisms, from cell to organ-system, used by animals in response to "changes in" environmental conditions such as oxygen, carbon dioxide, food availability, temperature, water, solutes, pressure and buoyancy.

Pre: BIOL 105, 106 or consent ALT-F

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## Biology

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### 432 (4) Limnology

Biotic, physical and chemical characteristics of freshwater ecosystems. Lab (fieldwork) included.

Pre: BIOL 105, 106, 215, or consent F

### 433 (3) Cardiovascular Physiology

This course is a functional study of the heart and circulatory system. S

### 434 (3) Development and Human Embryology

Understanding the process of cell differentiation and development. These principles are then applied to the descriptive study of human embryology including the basis of congenital malformations.

Pre: BIOL 100 or 105 F

### 435 (4) Histology

Study of types, arrangements and special adaptations of human tissues. Lab included.

Pre: BIOL 220 S

### 436 (4) Animal Behavior

An exploration of behavioral strategy, communication, learning, and social systems of animals, with emphases placed on the causes, evolution, ecological implications, and function of behavior at the individual and population level. Lab included.

Pre: BIOL 105, 106, or consent S

### 438 (3) General Endocrinology

This course provides the basis for understanding hormones and the mechanisms of their actions in both the normal and pathological states. Sample topics to be included are diabetes, osteoporosis, hormones of reproduction and current social and medical issues related to the course.

Pre: BIOL 100 or 105 S

### 440 (4) Horticulture

Fundamental principles of horticulture: classification, structure, growth and reproduction, technology including propagation, mineral nutrition, training and pruning, growth regulation and protection, horticultural crops and esthetic horticulture. Lab included.

Pre: BIOL 105 and 106 F

### 441 (4) Plant Physiology

Plant functions such as water relations, mineral nutrition, translocation, metabolisms, photosynthesis, photorespiration, fat and protein metabolisms, respiration, growth and development, phytohormones, reproduction and environmental physiology. Lab included.

Pre: BIOL 105, 106, 217, one semester organic chemistry recommended. S

### 442 (4) Plant Taxonomy

Field identification of plants with emphasis on local flora. History of systematics, techniques, plant biogeography, methods of plant collection, preservation, preparation of herbarium specimens are covered. Lab and field trips included.

Pre: BIOL 105, 106, or consent. BIOL 217 recommended. S

### 443 (4) Plant Ecology

Expands upon general principles of ecology to focus on the factors that regulate the distribution and abundance of plants, analysis of plant populations, and dynamics of plant communities. Lecture and lab (fieldwork) included. Pre: BIOL 105, 106, 215 or consent. BIOL 217 strongly recommended. F

### 444 (3) Fine Needle Aspiration Cytology

This course consists of a series of lectures, demonstrations, and laboratory sessions of the gross and microscopic anatomy, pathology, and cytology of various areas sampled using fine needle aspiration. Cytotechnology emphasis only. Permission required. F, S

### 445 (4) Economic Botany

We interact with plants every day and they've had a profound affect on human history and society. This course surveys the roles of plants in foods, beverages, medicines, drugs, poisons, fibers, fuels, building materials, ceremony, landscape, and more. Lecture, discussion, lab, and field trip. Open to non-science majors.

Pre: BIOL 100 or 105, or consent

### 447 (2) Cytopreparation Cytology

Lectures, demonstrations and laboratory sessions will be given in the various procedures carried out in the cytology laboratory. Collection and preparation techniques are described throughout the course series. Assignments in laboratory techniques continue through the year. Cytotechnology emphasis only.

Permission required. F, S

### 448 (3) Independent Projects

This course includes Check Sample and Journal Club presentations; projects involving literature research, cytopreparation, quality control/assurance, and cytology correlation. These projects will involve knowledge and use of: May search program, photography, computer skills (including Power Point for presentations) and educational methodology for presentation preparation. Cytotechnology emphasis only. Permission required. F, S

### 450 (5) Clinical Cytology

This portion of the program includes graded daily screening exercises. Students screen four hours a day at first, then move on to full day screening for approximately 30 days. A management series is presented during the clinical portion of the program, with two projects to be completed during the clinical segment. Cytotechnology emphasis only. Permission required. F, S

### 451 (3) Plant Biotechnology ALT-S

### 452 (3) Biological Instrumentation

The principle and operation of instruments and their application to biological research. Types of instrumentation examined include spectroscopic, chromatographic, electroanalytic, radiographic, and imaging. Laboratory Information Management systems (LIMS) will also be examined. Emphasis is placed on GLP, GMP, and ISO 9000 practices.

Pre: BIOL 105, 106, or consent S

**453 (4) Biological Engineering Analysis I**

The application of engineering principles and skills as applied to fermentation and to biological product recovery. Pre: BIOL 270 and one semester each of calculus, physics, and organic chemistry F

**454 (4) Biological Engineering Analysis II**

Continuation of Biological Engineering Analysis I. The application of engineering principles and skills as applied to fermentation and to biological product recovery. Pre: BIOL 453 S

**456 (3) Biotechnology Project I**

Practical laboratory experience in biotechnology through the selection and development of a research project. Students are expected to spend an average of 12 hours per week on the project. Pre: Concurrent enrollment in BIOL 453 F

**457 (3) Biotechnology Project II**

Continuation of Biotechnology Project/Laboratory I. Practical laboratory experience in biotechnology through the selection and development of a research project. Students are expected to spend an average of 12 hours per week on the project. Pre: BIOL 456, taken concurrently with BIOL 454 S

**460 (3) Introduction to Toxicology**

A lecture course covering basic principles of toxicity evaluation in living organisms, mechanisms of responses to chemicals or physical agents within an overview of practical medical, environmental and science policy implications. Presentation of comparisons of specific organ and tissue reactions to toxins in a variety of species follow these introductory concepts. Pre: BIOL 105, 106, and 1 year of General Chemistry ALT-F

**461 (4) Environmental Toxicology**

A lecture/laboratory course that focuses on anthropogenic and natural toxicants, mathematical modeling of the dispersion of chemical and physical agents in the environment, effects on species and ecosystems with a special section on aquatic risk assessment. The laboratory includes techniques in environmental toxicity and a genuine research project. Pre: BIOL 460 ALT-S

**462 (1) Toxicology Seminar**

A seminar course that involves critical evaluation of published studies in toxicology, student presentations of a selected published manuscript and requires students to write a paper on one aspect of the course's topic area that semester. Topic areas vary each time the course is offered. Pre: BIOL 105, 106, and General Chemistry ALT-F

**464 (3) Methods of Applied Toxicology**

A lecture/laboratory course focusing on the steps necessary to start a research project from project definition through methods testing and evaluation, and a final report that includes a project flow chart. Third year students will have senior and/or graduate mentors. Pre: BIOL 105, 106, and General Chemistry ALT-F

**465 (3) Applied Toxicology Project**

A lecture/laboratory course where students perform all aspects of their own designed research topic in toxicology while critically evaluating the progress of other projects as well. Students will be expected to keep timelines or develop modified timelines as necessary. The inverted triangle approach of project design will be examined and then included in all designs. Pre: BIOL 464 ALT-S

**466 (3) Principles of Pharmacology**

A lecture course that examines mechanisms of drug action, physiological responses and adverse reactions from sensitivities or allergies through overdose. Pre: BIOL 105, 106, 230, and 1 year of General Chemistry ALT-F

**467 (3) Industrial Hygiene**

A lecture course that examines Minnesota State University, Mankato, as your own work place to develop reports on a selected group of chemical and physical hazards of the workplace. Evaluation methods and solutions to existing problems are developed with concise reporting skills. Pre: BIOL 105, 106, and 1 year of General Chemistry ALT-S

**472 (4) Microbial Ecology and Bioremediation**

Role of microorganisms in soil, air, water, sewage processes as well as methods of measurement and detection. Special emphasis on the role of microorganisms in bioremediation. Lab included. Pre: BIOL 105, 106, and 270 ALT-S

**474 (4) Immunology**

Fundamental principles of humoral and cell mediated immunity and the application of these principles. Current experimental work in the different areas of immunology will be discussed. Lab included. Pre: BIOL 105, 106, and 270 F

**475 (4) Medical Microbiology**

This course will cover bacterial, fungal, and viral human pathogens: what diseases they cause, how they cause disease, and how humans defend against and prevent those diseases. In the laboratory the student will isolate and identify pathogenic microorganisms using microbiological, biochemical, and immunological techniques. Pre: BIOL 270 F

**476 (5) Microbial Physiology and Genetics**

This course presents the physiology and genetics of microorganisms emphasizing those aspects unique to bacteria and archaea. Topics include: energy production; biosynthesis of small molecules and DNA, RNA, and proteins; the formation of cell walls and membranes; microbial differentiation and behavior; and the genetic and biochemical regulation of these processes. Lab included. Pre: BIOL 105, 106, 270 S

**478 (4) Food Microbiology and Sanitation**

The role microbes play in production and spoilage of food products, as prepared for mass market. Topics in-



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## Biology

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clude foodborn pathogens, epidemiology and control, essential principles in sanitation including Hazard Analysis/Critical Control Point and ISO 9000 requirements. Lab included.

Pre: BIOL 105, 106 and 270 S

### 479 (4) Molecular Biology

This course will cover both eukaryotic and prokaryotic molecular biology including: DNA and RNA structure, transcription, regulation of gene expression, RNA processing, protein synthesis, DNA replication, mutagenesis and repair, recombination, and insertion elements. A number of important techniques used in recombinant DNA technology will be discussed and practiced.

Pre: BIOL 105, 106, or consent S

### 480 (2) Biological Laboratory Experiences for Elementary Teachers

Provides experience with a wide variety of biological laboratory exercises to prepare prospective elementary teachers. Emphasis is on building knowledge, skills, and confidence. The course will cover major biological concepts and environmental education through classroom-ready examples selected to illustrate each concept.

F, S

### 481 (1) Lab Supervision and Maintenance

Experience in maintaining and supervising laboratories. For individuals desiring additional experience with students in laboratory situations.

F, S

### 485 (4) Biology Teaching Methods and Materials

A basic science methods course designed to prepare prospective junior and senior high life science teachers. Course will cover science teaching methods and support materials as they apply to life science teaching situations.

Pre: 16 credits BIOL F

### 486 (3) Field-Based Teaching Methods and Materials

A lecture/laboratory course that provides opportunity for prospective junior and senior high life science teachers to observe, practice, and refine their teaching skills. Students will work in a school setting and experience actual classroom.

Pre: BIOL 485 ALT-S

### 490 (3) Workshop

A variable topic course designed for a selected topic in Biology. Workshops provide an intensive learning experience on a new topic in the Biological Sciences and/or hands-on experiences in a current area not covered by other course offerings. The course involves background reading, demonstrations, and laboratory or field experiences.

F, S

491 (1-4) In-Service F, S

492 (1-3) Honors Research F, S

### 497 (1-12) Internship I

Experience in applied biology according to a prearranged training program for a minimum of five 40 hour weeks.

Pre: Consent F, S

### 498 (1-12) Internship II

Experience in applied biology according to a prearranged training program for a minimum of five 40 hour weeks. Only four credits can be applied to the major.

Pre: Consent F, S

### 499 (1-4) Individual Study

Descriptions to be determined. F, S

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## Biotechnology

*College of Science, Engineering & Technology*

*Department of Biological Sciences*

242 Trafton Science Center S • 507-389-5731

Web site: [www.mnsu.edu/dept/biology](http://www.mnsu.edu/dept/biology)

Director: Gregg Marg, Ph.D.

Biotechnology is the application of recent developments in technology to manipulate the genetic and biochemical characteristics of an organism so that the organism or its metabolites can be economically produced for our benefit. In practice it requires the selection and genetic improvement of an organism for a specific purpose. Organisms may be used to synthesize a desirable product or degrade unwanted materials. The industrialization of this technology is dependent on the development of methods for scaling up processes developed in the laboratory.

Students interested in biotechnology could find careers in a wide variety of industrial applications. Examples of industries that use biotechnology are antibiotic and pharmaceutical; food; energy; agricultural pesticides; herbicides; fertilizers; growth chemicals and breeding programs; industrial chemicals, biocatalysts and diagnostics.

The biotechnologist works with research scientists on the development of processes in the laboratory and with engineers to transfer and scale up laboratory processes for large scale production required by industry. Because of the interdisciplinary nature of biotechnology, biotechnologists must have a strong background in the analytical and quantitative areas of science. In addition, the biotechnologist must be familiar with the theory and practice of genetic engineering and biochemical processes.

**Admission to Major** is granted by the department. Admission requirements are 32 earned semester credit hours including BIOL 105 and 106, with a grade of a "C" or better in both BIOL 105 and 106; and a minimum cumulative GPA of 2.0.

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### BIOTECHNOLOGY BS

#### Required General Education (13 credits):

MATH	121	Calculus I (4)
PHYS	211	Principles of Physics I (4)
CHEM	201	General Chemistry I (5)

#### Required Support Courses (25 credits):

MATH	122	Calculus II (4)
PHYS	212	Principles of Physics II (4)
CHEM	202	General Chemistry II (5)



## Business Education

CHEM	305	Analytical Chemistry (4)
CHEM	320	Organic Chemistry I (4)
CHEM	460	Biochemistry I (3)
CHEM	465	Biochemical Techniques I (1)

### Recommended Support Courses:

CHEM	461	Biochemistry II (3)
CHEM	466	Biochemical Techniques II (2)

### Required for Major (Core, 52 credits):

BIOL	105	General Biology I (4)
BIOL	106	General Biology II (4)
BIOL	211	Genetics (3)
BIOL	270	Microbiology (4)
BIOL	320	Cell Biology (4)
BIOL	451	Plant Biotechnology (3)
BIOL	452	Biological Instrumentation (3)
BIOL	453	Biological Engineering Analysis I (4)
BIOL	454	Biological Engineering Analysis II (4)
BIOL	474	Immunology (4)
BIOL	476	Microbial Physiology and Genetics (5)
BIOL	479	Molecular Biology (4)
The biotechnology major requires a 6 credit project. This may be taken as:		
BIOL	456	Biotechnology Project I (3)
BIOL	457	Biotechnology Project II (3) <b>or</b>
BIOL	497	Internship (6)

### Required Minor: None.

## POLICIES/INFORMATION

**P/N Grading Policy.** All courses must be taken for letter grades. Any exception to this policy must be approved by the chairperson of the department.

Refer to the College regarding required advising for students on academic probation.

**GPA Policy.** A minimum GPA of 2.0 must be maintained in biological sciences.

Several biology scholarships are available for entering freshmen and currently enrolled MSU students who meet the requirements. Application deadline is March 31 of each year.

The Department of Biological Sciences offers a well-balanced summer school program. For details concerning the courses being offered consult the summer bulletin.

## Business Administration

*College of Business*

150 Morris Hall • 507-389-2965

Coordinator: P. Schwinghammer, Ph.D.

### BUSINESS ADMINISTRATION MINOR

#### Required for Minor (Core, 31 credits):

MGMT	200	Introduction to MIS (3)
MGMT	330	Principles of Management (3)
ACCT	200	Financial Accounting (3)

ACCT	210	Managerial Accounting (3)
ECON	201	Principles of Macroeconomics (3)
ECON	202	Principles of Microeconomics (3)
ECON	207	Business Statistics (4)
BLAW	200	Legal, Political and Regulatory Environment of Business (3)
MRKT	310	Principles of Marketing (3)
FINA	362	Business Finance (3)

## POLICIES/INFORMATION

**GPA Policy.** Students must earn a minimum grade point average of 2.0 (C) on all the courses taken to earn the minor.

Students who are business minors, non-business majors, or those who are not seeking a four year degree may not complete more than 30 credits from the College of Business.

**Residency.** Transfer students pursuing a minor in the College of Business must complete 50% (one half) of their minor coursework through Minnesota State University, Mankato.

**Information Technology Initiative.** Students with a major or minor in the College of Business are required to acquire a notebook computer with a standard set of applications from the Campus Computer Store at Minnesota State University. Students who are majoring in other colleges will be able to enroll in non-notebook classes offered once per year. For further information see the College of Business section at the front of this bulletin.

**Assessment Policy.** The College of Business believes that the ongoing assessment of its programs makes a vital contribution to the quality of these programs and to student learning. Student participation in as important and expected part of the assessment process.

In addition to the Business Administration Minor, the College of Business offers other majors and minors in the areas of accounting, finance, international business, management, marketing, and business law.

## Business Education

*College of Education*

*Aviation and Business Education*

107 Armstrong Hall • 507-389-6116

Chair: John Roberts

The principal goals of Business Education are (1) to prepare students to meet the licensure requirements for service as teachers in grades 5 through 12; (2) to provide in-service education to vocational teachers in Minnesota; (3) to provide service courses to university students; and (4) to prepare students to be employed in business occupations.

The department offers an interinstitutional program that allows students to obtain a BS degree and teacher licensure from Winona State University. Through care-

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## Business Education

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ful articulation, most coursework for the teaching major will be offered locally. Some AIS courses will be transmitted to numerous locations using a combination of delivery technology. Before pursuing this major, students are encouraged to meet with the business education coordinator for assistance in program planning.

**Admission to Major** is granted by the department. Minimum university admission requirements are as follows:  
-a minimum of 32 earned semester credit hours.  
-a minimum cumulative GPA of 2.00 (C).  
Contact the department for application procedures.

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### Business Education BS Teaching

(Degree to be granted by Winona State University College of Business)

**Required General Education for Major (3 credits)**  
ECON 201 Macroeconomics (3)

**Required Support Courses for Major (21 credits)**

BED 345 Business Communications (3)  
ACCT 200 Financial Accounting (3)  
ACCT 210 Managerial Accounting (3)  
ECON 202 Microeconomics (3)  
FINA 362 Business Finance (3)  
BLAW 200 Legal, Political and Regulatory Environment of Business (3)  
MRKT 310 Principles of Marketing (3)

**Required Administrative Information Systems Content for Major (29 credits)**

(Courses to be taken at South Central Technical College)  
OTEC 1830 WP Concepts and Applications (3)  
OTEC 2815 Employment Portfolio (3)  
OTEC 2830 Desktop Publishing (3)  
OTEC 1870 Data Software-Access (2)  
OTEC 1880 Spreadsheet Software-Excel (2)

(Courses to be taken on-line through Winona State University)

AIS 215 Personal Finance (3)  
AIS 335 Information Resource Management (3)  
AIS 340 Integrated Information Systems Applications (3)  
AIS 360 Interpersonal Business Relations (3)  
AIS 435 Information Systems/Personnel Management (3)  
AIS 490 Capstone Seminar (1)

**Required Teaching Methods Courses for Major (6 credits)**

(Courses to be taken on-line through Winona State University)

AIS 401 General Methods (2)  
AIS 402 Basic Business Teaching Methods (1)  
AIS 403 Keyboarding Teaching Methods (1)  
AIS 404 Administrative Information Teaching Methods (1)  
AIS 405 Accounting Teaching Methods (1)

**Required Electives for Major (8 credits)**

(Courses to be taken on-line through Winona State University)

Choose elective credits in Technology-, Business-, and AIS-related courses.

**Required for Major (Professional Education, 30 credits)**

See the SECONDARY EDUCATION section for admission requirements to Professional Education and a list of required professional education courses.

**Transfer Student Advising.** Formal evaluation of prior academic preparation follows transfer orientation. The program coordinator approves the coursework based on course descriptions and syllabi and samples of completed work. **However, all courses in the required Professional Education sequence must be taken entirely from only one four-year university.**

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## COURSE DESCRIPTIONS

**120 (3) Introduction to Business Communication**

Introduction to Business Communications emphasizes proofreading, grammar, punctuation, vocabulary, spelling, as well as hands-on approach to writing. In addition to large and small group work, students compose on computers one or two days a week. Is an excellent foundation for all university students as all career choices require excellent written communication.

**161 (3) Word Processing/Keyboarding**

Develop basic touch keyboarding skills and efficient keyboarding techniques for all persons who will be inputting and retrieving information on alphabetic and numeric keyboards. Prepare personal and business correspondence, manuscripts, and reports on computers. Open to all students—with limited or no touch-typing skills.

**162 (3) Intermediate Word Processing/Keyboarding**

Develop employment skills and master word processing applications on computers. Recommended for students who wish to enhance skills beyond basic keyboarding and word processing.

Pre: BED 161, or equivalent

**163 (3) Advanced Word Processing/Keyboarding/Machine Transcription**

Produce business and personal correspondence, tables, macros, templates, manuscripts, and other documents using computers. Use transcription equipment for licensure competency.

Pre: BED 161 or 162, or equivalent

**201 (2) Information and Records Management**

Establish, manage, maintain, and manipulate a business database. Learn preservation and legal ramifications of paper, microfilm, magnetic, and other media. Learn about computers to maintain records.

**206 (3) Spreadsheets and Graphics**

Use computers to prepare, create, and illustrate spreadsheet and graphic business information.

### **215 (2) Information Processing Database Records Management**

Use computers for establishing, manipulating, and maintaining a relational database system. Understand management techniques of electronic filing systems.

### **291 (1-3) Project Study in Business**

Provide an opportunity to earn credit by completing a special project or individualized curriculum approved and directed by a faculty member.

Pre: Consent

### **297 (1-10) Office Experience**

Allow students to earn credit for supervised and documented office experience under the direction of their office supervisor and a faculty member. P/N only.

Pre: Consent

### **320 (1-3) Business Experience**

Earn two-for-one clock hours toward business and office education vocational teaching licensure through an apprenticeship program. Students will work as office employees and be supervised by their office supervisor and a faculty member. P/N only.

Pre: Consent

### **321 (1-3) Business Seminar**

Discuss the work flow, team work, decision making, and day-to-day activities for apprenticeship or office experience students. P/N only.

Pre: Consent

### **325 (3) Office Systems and Technology**

Use on-line computer systems in business offices to streamline business operations via electronic messaging, electronic calendaring, electronic data transmission, and other capabilities.

### **345 (3) Business Communications**

Develop and apply written and oral business communication skills into a variety of business and personal documents.

Pre: ENG 101; keyboarding/word processing skills, or equivalent, Recommended: BED 120

### **405 (3) Methods of Teaching Office Skills**

Discuss business education methodology regarding keyboarding, office procedures, multimedia, and computer applications. Techniques for topics such as handling discipline, managing a classroom, grading, conducting parent/teacher conferences. Includes school visitations and review of current literature.

Pre: BED 120, 163, 206, 215, 325, 481, or consent

### **406 (3) Methods of Teaching Business Subjects**

Discuss business education methodology regarding bookkeeping, accounting, consumer economics, business law, general business, career exploration, marketing, and other basic business subjects. Includes school visitations and review of current literature.

Pre: ACCT 200 and 210, BED 163 and 482, BLAW 450, FINA 362, MGMT 330, MRKT 310, ECON 201 and 202

### **415 (2) Student Organizations**

Learn the teacher-coordinator role as a vocational club advisor.

### **420 (2) Methods and Materials of Teaching Integrated Business Simulation**

Participate in and learn how to manage an integrated business simulation. Includes presentations and discussions to organize simulations for various teaching situations.

Pre: BED 163, or equivalent, or consent

### **430 (3) Senior Program Report**

A report prepared by experiential employed students to illustrate program objectives, approved projects, and evaluations.

Pre: Consent

### **431 (2) Materials and Methods of Teaching Cooperative Occupational Experience Programs**

Develop special instructional materials and intensive coordination methods.

### **432 (2) Coordination Techniques for Cooperative Occupational Experience Programs**

Develop program operation policies and practices.

### **434 (2) Principles and Practices of Vocational Technical Education**

Analyze the administration, organization, and operation of vocational education at the local, state, and national levels of government.

### **440 (2) Corporate Men and Women**

Designed to develop sensitivity in dealing with interpersonal relationships facing men and women in today's culturally diverse, competitive business world.

### **451 (3) Business Correspondence and Reports**

Write effective business letters and reports emphasizing the psychology of letter and report writing. Format, content, and creativity emphasized.

Pre: ENG 101 or consent; Recommended: BED 120 and 161

### **453 (3) Office Management**

Discuss physical facilities, layout, working conditions, equipment, scientific procedures, work simplification, and work efficiency standards regarding these elements.

### **460 (4) Office Systems Implementation and Applications**

Compare hardware and software for company needs. Plan and implement office automation components.

Pre: BED 325 or consent

### **470 (4) Integrated Office Systems**

A synthesis and application of concepts related to current office systems topics. Networking and consolidating current office systems via an integrated software approach.

Pre: BED 325, 453, 460 or consent

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## Business Education

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### **481 (3) Desktop Publishing**

Use microcomputer application software for desktop publishing. Planning, layout, production, and graphics features emphasized.

Pre: BED 161 or consent

### **482 (2) Secondary Computerized Accounting**

Learn and evaluate accounting software packages appropriate for secondary classroom instructional purposes.

Pre: ACCT 200 and 210, and BED 161, or equivalent

### **483 (2) Presentation Graphics**

Learn to create and present information by using electronic media.

### **489 (1-4) Vocational Curriculum Restructuring**

Learn formal procedure used to restructure vocational curriculum.

### **490 (1-3) Workshop**

Specialized subject workshops in business education.

### **491 (1-4) In-Service**

Specific topics designed to serve business and vocational teachers.

Pre: Consent

### **493 (1-4) Preapproved Occupational Update**

A directed program to investigate and observe current occupation conditions, qualifications, and patterns.

Pre: Consent

### **494 (1-4) Directed Occupational Experience**

Paid occupational experience following a training plan to qualify for a vocational teaching license.

Pre: Consent

### **495 (1-4) Internship: Vocational Teaching**

In-service supervision during nine weeks of the first 8 weeks of teaching. Satisfies Minnesota vocational teacher licensing requirement (State Plan, Sec. 1-33-2) for first-year secondary vocational teachers. Mandatory for nondegree teachers and those whose degree major is other than education. P/N only.

Pre: Consent

### **496 (1-10) Internship: Occupational Experience**

To qualify, student must demonstrate competency in a technical area through the university test-out procedure. The test must be completed during the student's last quarter of the BS degree program and is applicable only toward the vocational technical major. May be repeated. Maximum 30 credits. P/N only.

Pre: Consent

### **497 (1-10) Internship**

Supervised work experience in business, industry and state or federal institutions according to a prearranged training plan for a minimum of fifteen 40-hour weeks.

P/N only.

Pre: Consent

### **499 (1-4) Individual Study**

Pre: Consent

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## Business Law

*College of Business*

*Department of Accounting and Business Law*

150 Morris Hall • 507-389-2965

Chair: P. Schwinghammer, Ph.D.

P. Herickhoff, JD, G. Holmes, JD, D. Levin, JD

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### BUSINESS LAW MINOR

#### **Required for Minor (Core, 15 credits):**

ACCT	200	Financial Accounting (3)
COMS	101	Introduction to Microcomputers (3)
BLAW	200	Legal, Political and Regulatory Environment of Business (3)
BLAW	450	Contracts, Sales and Professional Responsibility (3)
BLAW	452	Employment and Labor Law (3)

#### **Required Electives (6 credits):**

Choose two of the following:

BLAW	371	Computer and Technology Law (3)
BLAW	453	The International Legal Environment of Business (3)
BLAW	455	Legal Aspects of Banking and Finance (3)
BLAW	474	Environmental Regulation and Land Use (3)
BLAW	476	Construction and Design Law (3)
BLAW	477	Negotiation and Conflict Resolution (3)
BLAW	483	Special Topics (3)

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### POLICIES/INFORMATION

**GPA Policy.** Students must earn a minimum grade point average of 2.0 (C) on all courses taken to earn the minor.

**Residency.** Transfer students pursuing a minor in the College of Business must complete one half of their minor coursework through Minnesota State University, Mankato.

**Information Technology Initiative.** Students with a major or minor in the College of Business are required to acquire a notebook computer with a standard set of applications from the Campus Computer Store at Minnesota State University. Students who are majoring in other colleges will be able to enroll in non-notebook classes offered once per year. For further information see the College of Business section at the front of this bulletin.

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### COURSE DESCRIPTIONS

#### **131 (3) Consumer Law and Ethics**

A survey of the law and ethics governing marriage, family, car ownership and insurance; civil rights (fair credit, fair housing, and equal employment opportunity); planning for illness and death; court procedures and alternative dispute resolution methods; jury service; the landlord-tenant relationship; and the rights of victims and people accused of crimes. F

**200 (3) Legal, Political, and Regulatory Environment of Business**

The American court system; alternative dispute resolution; ethics and the social responsibility of business; the relationship between common law, statutory law and regulatory law; constitutional, criminal, tort and contract law; product liability; agency and business associations.

Pre: ACCT 200, COMS 101 (MIS majors take COMS 102) F, S

**371 (3) Computer and Technology Law**

Fundamentals of patent, copyright and trademark protection; ownership of employee developed software; lease and purchase of computer systems and software. Discusses warranties, acceptance testing, remedies, software licensing, computer crime and legal liability of computer programmers.

F

**450 (3) Contracts, Sales and Professional Responsibility**

Fundamentals of contracts, the law of sales under the UCC; the legal liability of accountants to clients and third parties. Formation of contracts; statute of frauds and parol evidence rule; contract performance; remedies for breach of contract; scope of UCC Article Two; sales warranties; remedies for breach of contracts.

Pre: BLAW 200

F, S

**452 (3) Employment and Labor Law**

Federal employment discrimination laws; sexual harassment; first amendment rights; employee safety; workers' compensation; privacy; wrongful termination; federal laws governing the right to organize and bargain collectively; emerging issues.

Pre: BLAW 200

S

**453 (3) The International Legal Environment of Business**

Legal aspects of United States global trade policies, regulation of imports, contracting in the global marketplace, international marketing concerns, structure of various international organizations and treaties. Legal aspects of international licensing and technology transfers risks of nationalization and expropriation, international dispute resolution, comity, the Act of State, and sovereign immunity doctrines.

Pre: BLAW 200

V

**455 (3) Legal Aspects of Banking and Finance**

Legal aspects of checks and promissory notes, forgery and the use of counterfeit currency. Discusses the Federal Reserve check collection process, electronic banking, the purchase and sale of commercial paper, debtor and creditor rights, securities regulation, fundamentals of collateral foreclosure, the federal bankruptcy code and insurance law.

Pre: BLAW 200

V

**474 (3) Environmental Regulation and Land Use**

Legal aspects of land use planning, drainage, surface water rights and boundaries, mining and land reclamation, clean air, clean water, waste disposal, noise con-

trol and environmental permit processes. Discussion of legal aspects of Historic Landmark Preservation, National Environmental Policy, CERCLA, the Superfund, liability for environmental contamination and emerging environmental issues.

Pre: BLAW 200

V

**476 (3) Construction and Design Law**

Legal responsibilities of architects, engineers and contractors in dealing with each other, the project's owner, sureties and subcontractors. Special emphasis on performance problems, forms of business association, legal relationships with independent contractors, the AIA contract documents, mechanics liens, AAA Construction Arbitration Rules, dispute avoidance, claims management and collection strategies.

Pre: BLAW 200

F, S

**477 (3) Negotiation and Conflict Resolution**

Negotiation theory and techniques, mediation theory and techniques, use of neutrals, limits of confidentiality and ethical duties. Rule 114 and laws governing arbitration and management of the arbitration process. Extensive use of cases and role play.

Pre: BLAW 200

V

**483 (1-3) Special Topics**

Seminar topics may include women and the law, legal aspects of entrepreneurship, mergers and acquisitions, legal rights in computer software, investigating sexual harassment claims, copyright on the internet, immigration law, steps to become an IPO, privacy rights on computer networks, case studies in deregulation, legal aspects of leveraged buyouts, corporate takeover and ESOP's, complying with NAFTA.

V

**497 (1-8) Internship**

V

**498 (1-3) Internship**

V

**499 (1-3) Individual Study**

V

**Chemistry**

*College of Science, Engineering and Technology*

*Department of Chemistry & Geology*

242 Trafton Science Center N • 507-389-1963

Chair: Jeffrey R. Pribyl

Brian L. Groh, Michael J. Lusch, Marie K. Pomije, James Rife, Theresa Salerno, John Thoenke

The department is recognized by the American Chemical Society and offers a B.S. major that is approved by that organization. Anyone considering a chemistry or biochemistry major or chemistry minor should choose a departmental faculty member as an advisor and consult that advisor often throughout the course of study.

**Admission to Major.** Admission to a program is necessary before enrolling in 300- and 400-level courses. Admission is granted by the department. To be eligible for admission to the chemistry program, a student must have declared



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## Chemistry

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Chemistry or Chemistry Teaching as a first major, completed 32 credits including CHEM 201 and 202 and achieved a minimum GPA of 2.0. Students should also have an assigned chemistry advisor with whom they have discussed the program. Applications for admission to the chemistry program are available in the department office.

### CHEMISTRY BS

The Chemistry B.S. major offers students a choice of two options: Option I and Option II: ACS Approved.

#### OPTION I

Option I is for students who want a rigorous preparation in chemistry, but who do not need as comprehensive a program as that prescribed for the A.C.S. option.

#### Required General Education (9 credits):

MATH 121 Calculus I (4)

PHYS 221 General Physics I (5)

#### Required for Major (Support, 9 credits):

MATH 122 Calculus II (4)

PHYS 222 General Physics II (5)

#### Required for Major (Core, 41 credits):

CHEM 201 General Chemistry I (5)

CHEM 202 General Chemistry II (5)

CHEM 305 Analytical Chemistry (4)

CHEM 320 Organic Chemistry I (with lab) (5)

CHEM 321 Organic Chemistry II (2)

CHEM 331 Organic Chemistry II Lab (1)

CHEM 381 Introduction to Research (2)

CHEM 413 Advanced Inorganic Chemistry (3)

CHEM 423 Chemical and Spectroscopic  
Determination of Structure (5)

CHEM 440 Physical Chemistry I (3)

CHEM 441 Physical Chemistry II (3)

CHEM 450 Physical Chemistry Laboratory I (1)

CHEM 451 Physical Chemistry Laboratory II (1)

CHEM 495 Senior Seminar (1)

#### Required Electives for Major (Chemistry, 4 credits):

Choose a minimum of 4 credits from chemistry or biochemistry courses except CHEM 479 and CHEM 482:

CHEM xxx 300/400 Elective

CHEM xxx 300/400 Elective

#### Required Minor: None.

#### OPTION II: A.C.S. APPROVED

The B.S. Chemistry, A.C.S. option approved by the American Chemical Society is intended for professional chemists and provides an excellent preparation for graduate or professional school, industry or business. Any deviations from this program requires prior approval from the department.

#### Required General Education (9 credits):

MATH 121 Calculus I (4)

PHYS 221 General Physics I (5)

#### Required Support Courses (9 credits):

MATH 122 Calculus II (4)

PHYS 222 General Physics II (5)

#### Required for Major (Core, 50-51 credits):

CHEM 201 General Chemistry I (5)

CHEM 202 General Chemistry II (5)

CHEM 305 Analytical Chemistry (4)

CHEM 320 Organic Chemistry I (with lab) (5)

CHEM 321 Organic Chemistry II (2)

CHEM 331 Organic Chemistry II Lab (1)

CHEM 360 Principles of Biochemistry (4) **or**

CHEM 460 Biochemistry I (3)

CHEM 381 Introduction to Research (2)

CHEM 413 Advanced Inorganic Chemistry (3)

CHEM 415 Inorganic Preparations (2)

CHEM 423 Chemical and Spectroscopic  
Determination of Structure (5)

CHEM 440 Physical Chemistry I (3)

CHEM 441 Physical Chemistry II (3)

CHEM 450 Physical Chemistry I Lab (1)

CHEM 451 Physical Chemistry II Lab (1)

CHEM 475 Instrumental Analysis (4)

CHEM 495 Senior Seminar (1)

#### Required Electives for Major (Chemistry, 1 credits):

Students opting for CHEM 460 must choose at least 1 credit from the following:

CHEM 407 CHEM 412 CHEM 424

CHEM 434 CHEM 461 CHEM 465

CHEM 474 CHEM 485 CHEM 496

CHEM 497 CHEM 498 CHEM 499

#### Required Electives (Physics or Mathematics, 3-4 credits):

Choose a minimum of 3 credits from the following courses:

PHYS 441 PHYS 447 PHYS 453

PHYS 473 MATH 321 MATH 455

#### Required Minor: None.

### CHEMISTRY BA

#### Required General Education (3-4 credits):

MATH 113 Trigonometry (3) or

MATH 115 Precalculus Mathematics (4) or

MATH 121 Calculus I (4)

#### Required Support Courses (4-5 credits):

PHYS 211 Principles of Physics (4) or

PHYS 221 General Physics I (5)

#### Required for Major (Core, 27 credits):

CHEM 201 General Chemistry I (5)

CHEM 202 General Chemistry II (5)

CHEM 305 Analytical Chemistry (4)

CHEM 320 Organic Chemistry I (with lab) (5)

CHEM 321 Organic Chemistry II (2)

CHEM 331 Organic Chemistry II Lab (1)

CHEM 381 Introduction to Research (2)

CHEM 412 Intermediate Inorganic Chemistry (2)

CHEM 495 Senior Seminar (1)

#### Required Electives for Major (Chemistry, 6 credits):

Choose a minimum of 6 credits from chemistry or biochemistry courses except CHEM 479 and CHEM 482:

CHEM 300/400 Elective  
CHEM 300/400 Elective

**Required for Bachelor of Arts (BA) degree ONLY:**  
Language (8)

**Required Minor: Yes.**

#### CHEMISTRY MINOR

**Required for Minor (Core, 19 credits):**

CHEM 201 General Chemistry I (5)  
CHEM 202 General Chemistry II (5)  
CHEM 305 Analytical Chemistry (4)  
CHEM 320 Organic Chemistry I (with lab) (5)

#### CHEMISTRY TEACHING BS

Requirements for the Chemistry Teaching BS can be found in the SCIENCE TEACHING section of the bulletin. For information, consult the chemistry education advisor, Jeffrey Pribyl.

#### POLICIES/INFORMATION

**GPA Policy.** Students obtaining a major or minor in chemistry must maintain an overall GPA of 2.0 with no more than 5 credits of D work in chemistry courses.

**P/N Grading Policy.** Courses leading to a major or minor in chemistry or biochemistry may not be taken on a P/N basis except where P/N grading is mandatory.

The first year of coursework for all chemistry and biochemistry majors should include two semesters of chemistry (201, 202) and two semesters of mathematics (selection of courses depends on mathematics background). During the second year, the recommended courses include organic chemistry, advanced mathematics, physics, analytical chemistry. It is important for B.S. chemistry majors that the calculus and physics sequences be completed by the end of the second year since they are prerequisites for physical chemistry. Physical chemistry and instrumental analysis should be taken during the third year. The advanced courses in chemistry and biochemistry can be taken in the junior and senior years. Participation in chemistry seminar is required of all majors. The coursework in mathematics and physics that is required for a major may be credited toward a major or minors in these areas. For this reason it is often desirable and convenient to choose a joint major or minor with physics or mathematics.

#### COURSE DESCRIPTIONS

##### 100 (4) Chemistry in Society

This lecture and laboratory course investigates the world of chemistry, the nature of matter and our interactions with chemicals on a daily basis. This course is intended for non-science majors and is not a preparation for CHEM 111 or 201. F, S

##### 105 (3) Introduction to Chemistry

Introduction to inorganic chemistry. This is a non-laboratory class designed for the student unprepared to enroll in CHEM 111 or CHEM 201. F, S

##### 111 (5) Chemistry of Life Processes

This course is an introduction to organic chemistry and biological chemistry for students in nursing, dental hygiene, dietetics, and athletic training. The laboratory will reinforce lecture concepts.

Pre: CHEM 105 or High School Chemistry F, S

##### 131 (3) Forensic Science

This chemistry course explores the scientific basis of crime-fighting using chemical evidence. Course topics will include discussions of different kinds of evidence, how evidence must be preserved in order to be of value, how to select and analyze samples, how to interpret results of scientific tests, and case studies used as examples throughout the course. There will also be discussions of ethical questions about the collection analysis and uses of forensic data. V

##### 132 (3) Chemistry of Energy

This course explores and evaluates energy sources from a chemical perspective. In addition to discussion of chemical processes associated with traditional energy sources such as fossil fuels, alternative sources such as solar energy and "next generation" batteries will be presented. In conjunction with this information the environmental and societal consequences for each alternative will be explored. V

##### 133 (3) Challenges to Our Global Environment

This course will examine two of the most significant environmental challenges facing modern society: stratospheric ozone depletion and global climate change, from an interdisciplinary perspective. The course will start by examining, with a minimum of mathematics, the scientific basis and evidence for these phenomena, and then go on to consider the potential implications of and solutions to these challenges. In order to understand these potential implications and solutions, we must realize and understand the interdisciplinary nature of these challenges. V

##### 134 (3) Mind Altering Substances

This course will explore the scientific, pharmacological, neurochemical and cultural aspects of psychoactive substances. The material is presented intuitively, with no mathematics. Course topics will include discussions of the major classes of pharmaceutical and psychoactive substances, basic neurochemistry, the role of psychoactive substances in medicine, the ritual use of psychoactive substances by traditional cultures, the FDA approval process, the significance and implications of drug testing, the controversy of drug-induced behavioral modification, national and global perspectives of substance abuse and the ethics of legalization. V

##### 201 (5) General Chemistry I

Introduction to the basic principles of chemistry including atomic and molecular structure, bonding, chemical reactions, stoichiometry, thermodynamics and states of matter. Laboratory will reinforce lecture concepts.

Pre: MATH 112 or equivalent; high school Chemistry, CHEM 105 or instructors consent F, S

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## Chemistry

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### 202 (5) General Chemistry II

Continuation of the basic principles of chemistry including properties of solutions, kinetics, acids and bases, equilibria, buffers, precipitation reactions, electron transfer reactions, electrochemistry, entropy and free energy. Laboratory will reinforce lecture concepts.

Pre: CHEM 201

F, S

### 299 (1-6) Individual Study

#### 305 (4) Analytical Chemistry

Introduction to the principles of chemical analysis, with emphasis on classical methods of analysis. Lectures will stress the theory of chemical measurements and sample handling. Laboratory exercises will provide students with opportunities to explore calibration methods, method development, and established procedures for volumetric and gravimetric analyses. Basic atomic spectroscopy is also presented.

Pre: CHEM 202

F, S

#### 320 (5) Organic Chemistry I

Introduction to organic structure, bonding, chemical reactivity, reactions as acids and bases, mechanisms and stereochemistry. The chemistry of alkanes, alkyl halides, alkenes, alkynes, alcohols, ethers, aldehydes and ketones, carboxylic acids and their derivatives, and amines will be covered. Laboratory illustrates synthetic techniques and the preparation and reactions of functional groups discussed during lecture.

Pre: CHEM 202

F, S

#### 321 (2) Organic Chemistry II

The chemistry of aromatic compounds, free radicals, polyenes, macromolecules, heterocyclic compounds, carbohydrates, amino acids, peptides, and proteins will be covered. This will include a study of mechanisms, synthetic transformations, concerted reactions, and spectroscopy.

Pre: CHEM 320

S

#### 331 (1) Organic Chemistry II Lab

Laboratory illustrating electrophilic aromatic substitutions and other reactions of aromatic compounds, synthetic transformations as well as qualitative organic analysis.

Pre: CHEM 321 previously or concurrently

S

#### 360 (4) Principles of Biochemistry

Analysis of the structure and metabolism of biologically important compounds. This intermediate-level course is designed for students in the medical technology, food science, chemistry education, and pre-professional health majors. The laboratory teaches basic biochemical techniques.

Pre: CHEM 320

S

#### 381 (2) Introduction to Research

Introduction to the use of chemical literature (in print and electronic media), current departmental faculty research interests, safe and ethical conduct of laboratory research, and proper recording of research results in laboratory notebooks. Students perform a literature search and write a proposal for an undergraduate research project.

Pre: CHEM 321

F

### 407 (3) Water Chemistry

A broad introduction to the chemistry of natural waters and chemical analysis of such systems. Topics covered may include: macromolecular analytes, organic analytes, inorganic analytes, major component/minor component/trace component determinations, matrix effects, equilibrium processes, modeling of chemical/physical transport, regulatory monitoring, and compliance issues. Laboratory exercises will provide students with goal-oriented, cooperative experiences in sampling and measurement of complex samples.

Pre: CHEM 305

V

#### 412 (2) Intermediate Inorganic Chemistry

Use of the principles of chemistry such as atomic structure, bonding, thermodynamics and acid-base behavior to focus on the properties of the more interesting, important and unusual elements and compounds. Emphasis will be placed on the representative elements and selected transition elements.

Pre: CHEM 320

S

#### 413 (3) Advanced Inorganic Chemistry

A survey of topics in inorganic chemistry including quantum mechanics, symmetry and group theory, solid state chemistry, molecular structure and geometry, bonding theories, and coordination chemistry, emphasizing the theoretical foundation.

Pre: CHEM 440

F

#### 415 (2) Inorganic Preparations

The preparation and study of inorganic/organometallic compounds utilizing a variety of synthetic techniques including common Schlenk techniques. The studies will include characterization by common instrumental methods such as IR, NMR and UV-vis spectroscopy. Additional studies using instrumental techniques such as IR, NMR, UV-vis, electrochemistry and magnetic susceptibility will also be conducted.

Pre: CHEM 413

S

#### 423 (5) Chemical and Spectroscopic Determination of Structure

Wet chemical and nuclear magnetic resonance, infrared, and mass spectral techniques for determining structural features of molecules. Spectroscopic methods emphasize interpretation of spectra, and also provide hands-on operation of the corresponding electronic instruments. The laboratory uses these techniques for the determination of the structures of a series of unknown compounds.

Pre: CHEM 321 and 331

F

#### 424 (3) Advanced Organic Chemistry

Advanced synthetic organic reactions and their mechanisms. Laboratory will include examples of some of this chemistry, and techniques for reaction monitoring and product purification.

Pre: CHEM 423

S-EVEN

#### 434 (2) Industrial Chemistry

The synthesis and properties of organic macromolecules, especially industrially important polymers, and the chemistry of other industrially important chemical reactions and processes.

Pre: CHEM 321

S-ODD

**440 (3) Physical Chemistry I**

Detailed treatment of thermodynamics and chemical kinetics. Topics include equations of state, laws of thermodynamics, statistical thermodynamics, phase and reaction equilibrium, thermodynamics of solutions and electrochemistry, transport properties, and reaction kinetics.

Pre: CHEM 305, 321, one year of physics, MATH 121  
F

**441 (3) Physical Chemistry II**

Detailed treatment of quantum mechanics, spectroscopy, and statistical mechanics. Topics include the foundations of quantum mechanics, application of quantum mechanics to atomic and molecular structure, foundations of spectroscopic techniques and statistical mechanics.

Pre: CHEM 440, MATH 122  
S

**445 (2) Advanced Physical Chemistry**

Integrated application of the content from 440 and 441 to an applied topic of interest to the instructor. The course will depend heavily on reading and discussion of current primary literature of physical chemistry. Possible topics include: atmospheric chemistry, thermodynamics of protein folding, catalytic processes, or molecular processes at interfaces.

Pre: CHEM 441  
V

**450 (1) Physical Chemistry Laboratory I**

Laboratory to accompany 440. An advanced treatment of measurement theory and data analysis precedes a series of thermodynamic and kinetic experiments designed to complement topics treated in lecture to help students' independence and sophistication in planning, performing, and reporting experimental work.

Pre: CHEM 440 previously or concurrently  
F

**451 (1) Physical Chemistry Laboratory II**

Laboratory to accompany 441. Experiments and computational projects in quantum mechanics, spectroscopy, and statistical mechanics. The experiments and projects will continue to work toward the goal of increasing the students' independence and sophistication.

Pre: CHEM 441 previously or concurrently  
S

**460 (3) Biochemistry I**

Detailed analysis of the structures, properties, and functions of proteins, carbohydrates, and lipids; introduction to carbohydrate metabolism; theory for the purification and analysis of proteins and nucleic acids. Concurrent enrollment in CHEM 465 is recommended.

Pre: CHEM 320, and BIOL 106  
F

**461 (3) Biochemistry II**

Detailed analysis of the reactions involved in intermediary metabolism, translation, transcription, and replication.

Pre: CHEM 460  
S

**465 (1) Biochemical Techniques I**

A lecture/laboratory course which presents methodology and instrumentation used to purify and analyze biomolecules. Techniques include chromatography, autoradiography and radioisotope techniques, polyacry-

lamide gel electrophoresis, ultracentrifugation, and spectrophotometry.

Pre: CHEM 460 previously or concurrently, CHEM 305 is recommended.  
F

**466 (2) Biochemical Techniques II**

Students work in teams to solve biochemical research problems by analyzing data from experiments which they design.

Pre: CHEM 460 and 465  
S

**474 (2) Chromatography**

Theory and applications of thin layer, paper, liquid, gas and supercritical fluid chromatography and capillary electrophoresis.

Pre: CHEM 320 previously or concurrently is recommended  
F-EVEN

**475 (4) Instrumental Analysis**

Theory and practice of modern instrumental methods including basic electronics. Special emphasis placed on sampling methods, analog and digital electronics, electrochemistry, spectrophotometric and chromatographic methods, surface and thin-film analysis and computer acquisition and data processing techniques.

Pre: CHEM 305; PHYS 212 or 222 is recommended  
S

**477 (1-3) Special Topics in Instrumental Analytical Chemistry**

Detailed study and focused discussion of a specific analytical technique such as electrochemistry, X-ray analysis, etc. or an area of analysis such as metals, bioanalytical, etc. May be taken more than once for credit.

Pre: CHEM 305  
V

**479 (4) Teaching Physical Science**

Methods and materials for teaching physical sciences in middle school through high school. Clinical experiences required for the course.

Pre: Consent  
S

**482 (1-3) Problems in Teaching Science**

V

**485 (1-2) Seminar in Environmental Chemistry**

Study of current environmental problems or issues with emphasis on the relevant chemical needs and understanding necessary to monitoring or alleviating the problems.

Pre: CHEM 305  
V

**490 (1-6) Workshop****495 (1) Senior Seminar**

Capstone course for majors in Chemistry, Biochemistry and Chemistry Teaching. During this course students will present the results of their research in several different forums including oral presentations and poster sessions.

Pre: Consent  
S

**496 (1-6) Senior Thesis****497 (1-16) Internship****498 (1-6) Undergraduate Research****499 (1-6) Individual Study**

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## Civil Engineering

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### Civil Engineering

*College of Science, Engineering and Technology*  
*Department of Mechanical & Civil Engineering*  
205 Trafton Science Center E • 507-389-6383  
Fax 507-389-5002  
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Chair: Saeed Moaveni, Ph.D., P.E.

Vance Browne, Ph.D., P.E., Karen C. Chou, Ph.D., P.E.,  
Jerzy Fiszdon, Ph.D., P.E., Charles W. Johnson, Ph.D.,  
P.E., Vojin Nikolic, Ph.D.

Adjunct Faculty: Herman A. Dharmarajan, Ph.D., P.E.,  
D.E.E., William R. Douglass, P.E., Jon Huseby, P.E.,  
Timothy O. Loose, P.E., Ken Saffert, P.E.

Civil Engineering, as defined by the American Society of Civil Engineers, is a profession in which a knowledge of the mathematical and physical science gained by study, experience, and practice is applied with judgment to develop ways to utilize, economically, the materials and forces of nature for the progressive well-being of humanity in creating, improving and protecting the environment, in providing facilities for community living, industry and transportation, and in providing structures for the use of humanity.

Civil engineers design and supervise, among others, the construction of roads, buildings, airports, tunnels, dams, bridges, and water supply and water and wastewater treatment systems. Major specialties within civil engineering are: structures, geotechnical engineering, water resources, transportation, environmental engineering, and construction.

Many civil engineers hold administrative positions, from city engineers to deputy commissioner of state department of transportation. Others may work in design, construction, research, and teaching. Most civil engineers hold supervisory positions such as project engineers.

**Program Mission Statement.** The Mission of the Civil Engineering Program at Minnesota State University, Mankato is to provide a broad based education that will allow students to attain the knowledge and communication skills necessary to join any area of the Civil Engineering profession to serve the needs of the State of Minnesota and the Nation. The program also provides the students with the necessary background to pursue graduate studies in Civil Engineering.

**Goals and Objectives.** Goals and objectives are attributes necessary to achieve a mission. The Civil Engineering Program at Minnesota State University has identified the following goals and objectives to meet its mission:

1. To provide high quality learning environment.
2. To provide highly competent and dedicated faculty.
3. To provide modern teaching and laboratory

equipment and facilities.

4. To provide professional courses to achieve proficiency in geotechnical, structures, transportation and water resource (hydrology) engineering.
5. To provide opportunities for students to acquire communication, people and managerial skills.
6. To provide strong hands-on laboratory experience.
7. To provide opportunity for professional practices, such as internship.
8. To foster strong bonds of faculty-students interaction through extracurricular activities such as ASCE, personal advising and consultation.
9. To foster an appreciation for professional development and life long learning.

These goals and objectives are fully compatible with the mission of Minnesota State University, Mankato and the College of Science, Engineering and Technology. Goals and objectives are monitored by the constituencies (civil engineering profession through the program's Advisory Board and employers, students, alumni and faculty) of the program.

#### Preparations

Recommended high school preparation is two years of algebra, one year of geometry, one-half year of trigonometry, one-half year of college algebra, and a year each of physics and chemistry. Computer skills such as word processors, spreadsheets and PowerPoint presentation or similar are also recommended. Without this background it may take longer than four years to earn the degree.

**Admission to Major** is necessary before enrolling in 300- and 400-level courses. Admission to the program is granted by the department. Near the end of the sophomore year, students should submit an application for admission to the civil engineering program. Applications to the program may be obtained from the Department of Mechanical and Civil Engineering or downloaded from the department homepage.

Admission to the program is based on GPA and performance in selected courses and is subject to approval by the Department of Mechanical and Civil Engineering. Only students admitted to the program are permitted to enroll in upper-division civil engineering courses. Generally, no transfer credits are allowed for upper-division civil engineering courses. For any exceptions to this policy, special written permission must be obtained and will be reviewed by the department. The department makes a special effort to accommodate transfer students. Transfer students are encouraged to contact the department as soon as possible to facilitate a smooth transition. Please feel free to write, call or visit the department.

Before being admitted to upper-division civil engineering courses, a student must complete a minimum of 49 credits, including the following courses: General Physics (calculus based) 10 credits; Calculus and Differential Equations 16 credits; Introduction to Engineering 1 cred-



## Civil Engineering

its.; Computer Graphics 2 credits; computer programming language 2 credits; Engineering Mechanics (Statics, Dynamics, and Mechanics of Materials) 9 credits; Chemistry 5 credits; and English Composition 4 credits.

For transfer students the distribution of credits specified in the previous paragraph may vary, but the total credits must satisfy departmental transfer requirements. Transfer students should contact department for individual evaluation.

All courses and credits shown above must be completed before enrollment in 300-level engineering courses. All of the above courses except Introduction to Engineering and any internship credits must be taken for "grade". It is not acceptable for the student to take any of these courses on a pass/no credit basis. A grade of "C" or better must be achieved in each course. To be considered for admission, the student must have a cumulative GPA of 2.5 for all science, math, ME and CIVE courses. Admission to the Civil Engineering Program is selective and subject to approval of the Civil Engineering Academic Standards Committee. Failure to submit an application could result in the student being denied admission to the program and registration in junior or higher level classes in the Civil Engineering Program, he/she can reapply to the Civil Engineering Program for admission in subsequent years. If the applicant has attended Minnesota State University, Mankato only the application form is submitted to the Department of Mechanical and Civil Engineering along with a copy of that student's MSU transcript obtained from "The Hub". If the applicant has transfer credits from another college or university, or expects to be admitted as a transfer student, all transfer courses/credits must be evaluated by the Office of Admissions at Minnesota State University, Mankato. The transfer student will need to refer to the Supplemental Information and/or the Minnesota State University, Mankato Undergraduate Bulletin for information about procedures that need to be followed when making application for admission as a transfer student. Applicants for admission to the program must also submit a complete plan of study.

### CIVIL ENGINEERING BS

#### Required (Special General Education, 23 credits):

The Bachelor of Science in Civil Engineering degree does NOT adhere to the 44 credits of general education required by other colleges. Rather it requires a special distribution of communication, humanities, and social science courses. Courses should be chosen to simultaneously satisfy the university cultural diversity requirement.

#### Required Communication Courses (7 credits):

ENG 101 Composition (4) and  
SPEE 102 Public Speaking (3) or  
SPEE 233 Public Speaking for Technical Profession (3) or  
ENG 271 Technical Communication (4)

#### Required Humanities and Social Science Courses (minimum of 16 credits):

To satisfy this requirement, the courses selected must provide both breadth and depth and not be limited to a selection of unrelated introductory courses. Not all courses in humanities and social sciences are acceptable. Courses should be chosen to simultaneously satisfy the university cultural diversity requirement. Each student should discuss with his/her civil engineering advisor selection of courses to meet this requirement. All students are urged to discuss this plan with their civil engineering advisors early in their academic year. An updated list of acceptable courses is posted in the department office.

Specifically, the minimum requirements consist of (a) three credits of microeconomics or macroeconomics, (b) at least 6 credits in the humanities area, and (c) at least 6 credits in the social science area; again (a), (b), and (c) must total at least 16 credits.

To provide the measure of depth to the course of study, at least 3 credits at the 300-level or above must be included in the 16 credit requirement. At least one upper division course must follow a course in the same subject area.

#### Required for Major (Prerequisites, 64-65 credits):

##### Mathematics (19 credits):

MATH 121 Calculus I (4)  
MATH 122 Calculus II (4)  
MATH 223 Calculus III (4)  
MATH 321 Differential Equations (4)  
MATH 354 Concepts of Prob. & Stat. (3)

##### Basic Science (19-20 credits):

CHEM 201 General Chemistry I (5)  
PHYS 221 General Physics I (5)  
PHYS 222 General Physics II (5)

Science Elective from approved list (4-5)

##### Computing Science & Graphics (4 credits):

COMS 171 Intro. to C++ Programming (2)  
MET/CIVE 145 Computer Graphics (2)

##### Engineering Science (22 credits):

EE 101 Introduction to Engineering (1)  
EE 230 Circuit Analysis I (3)  
ME/CIVE 212 Statics (3)  
ME/CIVE 214 Dynamics (3)  
ME 206 Material Science (3)  
ME/CIVE 223 Mechanics of Materials (3)  
ME 241 Thermodynamics (3)  
ME/CIVE 321 Fluid Mechanics (3)

#### Required for Major (41-45 credits):

CIVE 201 Civil Engineering Seminar (1)  
CIVE 340 Structural Mechanics (3)  
CIVE 350 Intro. to Hydraulics & Hydrology (4)  
CIVE 360 Geotechnical Engineering (4)  
CIVE 370 Transportation Engineering (4)  
CIVE 401 Civil Engineering Design I (1)  
CIVE 402 Civil Engineering Design II (2)  
CIVE 436 Civil Engineering Experimentation (2)  
CIVE 446 Reinforced Concrete Design (3) or  
CIVE 448 Steel Design (3)  
CIVE electives (7-9 credits)

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## Civil Engineering

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IDCM 212 Surveying and Site Planning (2)  
Technical electives from approved list (6-7 credits)  
Science electives (4-5)

### **Required Minor: None.**

### **Civil, Science and Technical Electives**

A civil engineering student is required to choose a minimum of 24 credits in CIVE, science and technical electives: science elective (4-5 credits), technical electives (6-7 credits), and CIVE electives (7-9 credits). The science and technical electives are recommended to be taken after the student has identified his/her area of interest in consultation with his/her academic advisor. Science elective must be selected from the approved list (shown below) which would complement the student's area of interest in civil engineering. Technical electives must be selected from the approved list (shown below) which would enhance the student's experience in civil engineering.

#### *Approved Science Electives:*

BIO 105 General Biology I (5)  
CHEM 202 General Chemistry II (5)  
ENVR 101 Persp. in Environ. Science (4)  
GEOL 121 Physical Geology (4)

#### *Approved Technical Electives:*

All CIVE courses except required courses  
All EE courses 300 levels and above and EE 250 (Engineering Economics)  
All ME courses 300 levels and above  
BIO 270 Microbiology (4)  
BLAW 450 Contracts, Sales & Prof. Responsibility (3)  
BLAW 453 International Legal Environ. of Business (3)  
BLAW 474 Environ. Regulation & Land Use (3)  
BLAW 476 Construction and Design Law (3)  
CHEM 305 Analytical Chemistry (4)  
CHEM 407 Water Chemistry (3)  
ENVR 440 Environmental Regulations (3)  
ENVR 450 Environmental Pollution Control (3)  
ENVR 460 Analysis of Pollutants (3)  
GEOL 270 Structural Geology (4)  
GEOL 351 Engineering Geology (4)  
GEOL 450 Hydrogeology (3)

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### **POLICIES/INFORMATION**

**GPA Policy.** To maintain satisfactory progress in the upper-division Civil Engineering Program, a student must: (1) maintain a cumulative GPA of at least 2.3; and (2) achieve a GPA of at least 2.0 each semester.

**P/N Grading Policy.** P/N credit may not be applied to any 200-level or higher required course in the civil engineering curriculum except for internship credits and courses designated as P/N only.

**Probation Policy.** A student who does not maintain satisfactory progress as defined above will be placed on academic probationary status for a maximum of one semester. During the probationary period, the student must maintain satisfactory progress in addition: (a) must

complete at least 8 credits for grade from the prescribed Civil Engineering curriculum; and (b) shall not receive a degree without first conforming to the satisfactory progress criteria. A student who does not maintain satisfactory progress during the probationary period will not be allowed to continue in the program. The student may later reapply for admission to the program.

Refer to the College regarding advising for students on academic probation.

**Appeals.** A student has the right to appeal a department decision in writing. The department will consider such appeals individually.

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For most up-to-date list of Civil Engineering courses, please visit our web site at [ce.mnsu.edu](http://ce.mnsu.edu). Also see the Mechanical Engineering program for detailed description of ME courses and ME/CIVE dual listing courses, and the Manufacturing Engineering Technology program for detailed description of MET/CIVE dual listing courses that are required for the Civil Engineering Program.

### **145 (2) Computer Graphics**

Same as MET 145.

### **201 (1) Civil Engineering Seminar**

To introduce the students to the civil engineering profession and to begin the preparation for development towards the profession as an engineer through interactions with practicing engineers, reading, discussions and search of information through the internet.

### **212 (3) Statics**

Same as ME 212.

### **214 (3) Dynamics**

same as ME 214.

### **223 (3) Mechanics of Materials**

Same as ME 223.

### **321 (3) Fluid Mechanics**

Same as ME 321.

### **340 (3) Structural Mechanics**

Analysis of determinate and indeterminate structural systems using classical methods such as consistent displacements, energy method, slope-deflection and moment distribution. Use of computer software is expected. Pre: ME/CIVE 223

### **350 (4) Introduction to Hydraulics and Hydrology**

Concept of hydraulics such as pipe flow and open channel flow. Hydrologic principles such as weather patterns; precipitation measurement and distribution, abstractions, and runoff; storm hydrograph and peak flow analysis. Design includes flood designs, reservoir and channel routing. Pre: ME/CIVE 321

### **360 (4) Geotechnical Engineering**

Study of soil behaviors and their classifications; index properties. Applications of mechanics principles to soils as an engineering material, consolidation theory, compaction

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## Clinical Laboratory Sciences/Medical Technology

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theory, effective stresses, shear strength; earth pressure and slope stability. Elements of foundation designs.

Pre: ME/CIVE 223, ME/CIVE 321

### 370 (4) Transportation Engineering

Introduction to Transportation systems; land use and transportation interaction, planning, and traffic operations; transportation decision making using economic analysis. Introduction to design, construction, maintenance, and operation of various transportation modes. Co-req.: ME/CIVE 321 or consent of instructor.

### 401 (1) Civil Engineering Design I

Practical civil engineering design project with “real world” constraints. This course focus on the planning and formulation of the project and is a pre-requisite course of CIVE 402.

Pre: CIVE 350, CIVE 360, CIVE 370, and CIVE 446 or CIVE 448

### 402 (2) Civil Engineering Design II

Practical civil engineering design project with “real world” constraints. This course focus on the engineering analysis and design and economic analysis of the project. The course includes a design lab.

Pre: CIVE 401

### 436 (2) Civil Engineering Experimentation

Laboratory experiments in civil engineering materials including, soil, concrete, asphalt, and metals as well as testing of structural components and structural systems, and experiments in hydraulics.

Pre: CIVE 340, CIVE 350, CIVE 360, ME/CIVE 321

### 446 (3) Reinforced Concrete Design

Design of reinforced concrete beams, columns, slabs and structural foundations. Use of standard specifications is required. Use of computer software is expected

Pre: CIVE 340

### 448 (3) Steel Design

Behavior and properties of structural steel; proportionality of tension members, beams, and columns using LRFD specifications.

Pre: CIVE 340

### 450 (3) Finite Element Method

Same as ME 450

### 465 (3) Foundation Design

Classification of foundations; applications of fundamental soil mechanics to design and analysis of soil-structure systems; design and computer application of shallow and deep foundations, piles and caissons, retaining structures. Introduction to rock mechanics.

Pre: CIVE 360

### 470 (3) Traffic Engineering

Elements of traffic engineering including road use, vehicle and roadway system; traffic flow theory; traffic studies and data collections; traffic control devices; principles of intersecting signalization; capacity and level of service; analysis of freeways, rural highways and intersections using computer software for traffic operations and management.

## Clinical Laboratory Sciences/ Medical Technology

*College of Science, Engineering & Technology  
Department of Biological Sciences*

246 Trafton Science Center S • 507-389-2417

Web site: [www.mnsu.edu/dept/biology](http://www.mnsu.edu/dept/biology)

Director: Lois Anderson, MT(ASCP)

The four-year clinical laboratory sciences & medical technology curriculum leads to the degree of Bachelor of Science in clinical laboratory sciences & medical technology. The first three years are spent at the university. The fourth year is spent at one of the affiliated hospital schools of clinical laboratory sciences/medical technology. Upon successful completion of this year, the B.S. degree is awarded by the university and graduates are then eligible to take a certifying examination.

Because the clinical laboratory sciences/medical technology curriculum closely parallels that of other majors, such as biology, students from other majors are encouraged to apply.

**Admission to Major** is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

Students should contact the Department of Clinical Laboratory Sciences & Medical Technology early in their college career for admission to the program, for academic and career counseling, and for information on the process and standards for admission to the professional curriculum, including registration procedures. Because enrollment in the fourth year is limited by the size of classes in the affiliated hospital schools, admission to the program does not ensure admission to the fourth year of the curriculum. Admission into the fourth year hospital clinical internship is competitive.

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### CLINICAL LABORATORY SCIENCE/ MEDICAL TECHNOLOGY BS

#### Required General Education (9 credits):

CHEM 201 General Chemistry I (5)

MATH 112 College Algebra or any higher numbered math course listed in General Education Category 4

#### Required Support Courses (18 credits):

CHEM 202 General Chemistry II (5)

CHEM 305 Analytical Chemistry (4)

CHEM 320 Organic Chemistry I (5)

CHEM 360 Principles of Biochemistry (4)

#### Required for Major (Core, 31 credits):

BIOL 105 General Biology I (4)

BIOL 106 General Biology II (4)

BIOL 175 Orientation to Clinical Laboratory Science (1)

BIOL 211 Genetics (3)

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## Clinical Laboratory Sciences/Medical Technology

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BIOL	230	Human Physiology (4)
BIOL	270	Microbiology (4)
BIOL	420	Diagnostic Parasitology (3)
BIOL	430	Hematology/Introduction to Immunology (4)
BIOL	475	Medical Microbiology (4)

### Required for Major (Internship, 32-39 credits):

Complete up to 32-39 credits from the following courses:

MEDT	410	MEDT	411	MEDT	412
MEDT	413	MEDT	414	MEDT	415
MEDT	416	MEDT	417	MEDT	418
MEDT	419	MEDT	420	MEDT	499

### Required Minor: None.

### Special Requirements:

If internship is at Hennepin County Medical Center students must complete:

BIOL	380	Blood Banking/Urinalysis (3)
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If internship is at the University of Minnesota, students must complete: A second math class either in pre calculus, calculus, or biostatistics. The University of Minnesota does not require BIOL 420, BIOL 430, or BIOL 475, but highly recommends BIOL 220 Human Anatomy and PHYS 211 Principles in Physics I for admission to their internship program.

This is in addition to degree requirements.

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### POLICIES/INFORMATION

Students majoring in Clinical Laboratory Sciences & Medical Technology have an advisor from their area of interest assigned to them. Questions and concerns pertaining to advising and the assignment of advisors can be answered by Angie B. Bomier, student relations coordinator, C125 Trafton Science Center, telephone 389-1521.

**GPA Policy.** A GPA of 2.5 is required in both sciences courses and cumulative coursework.

**Probation.** Refer to the College regarding required advising for students on academic probation.

**P/N Grading Policy.** No P/N grades are accepted toward the major except BIOL 175.

Agencies participating in the Clinical Laboratory Sciences/Medical Technology program include, but are not limited to: Hennepin County Medical Center, Minneapolis, John T. Crosson, M.D., Patricia J. Ellinger, MT(ASCP); Mercy Hospital Medical Center, Des Moines, Iowa, Vijaya Dhanwaza, M.D., Stacy Sime, MT(ASCP); St. Luke's Methodist Hospital, Cedar Rapids, Iowa, Kinsley Grant, M.D., Nadine Sojka, MT(ASCP); University of Minnesota, Minneapolis, MN, Patricia Solberg, MT(ASCP), Donna Spannaus-Martin, Ph.D. Hennepin County Medical Center and the University of Minnesota are required by law to do background checks on all students admitted to their medical technology internship program.

### COURSE DESCRIPTIONS

#### 410 (1-10) Clinical Hematology I

Theory of blood cell formation; disease states; hemostasis, microscopic examination of blood/bone marrow films; practical experience with instruments and techniques which determine major hematologic and clotting parameters; quality control.

#### 411 (1-10) Clinical Immunohematology I

Major blood group systems; principles and procedures for antigen/antibody detection, identification; donor blood collection, preservation, processing; component therapy; transfusion reaction evaluation; Rh immune globulin; quality control.

#### 412 (1-10) Clinical Immunology

Antigen/antibody structure function and interaction; basic principles and procedures of humoral and cellular immunology; performance and clinical correlation of serological testing; quality control.

#### 413 (1-10) Clinical Chemistry I

Identification and quantification of specific chemical substances in blood and body fluids by analytical techniques; clinical correlation with disease states; principles of instrumentation; data processing; toxicology; quality control.

#### 414 (1-10) Clinical Microbiology I

Theory and techniques of cultivation, isolation and identification of bacteria, fungi, parasites and viruses; determination of sensitivity to antimicrobial agents; clinical correlation to disease states; asepsis; environmental monitoring; quality control.

#### 415 (1-10) Clinical Microscopy I

Theory of renal function in health and disease; renal function tests including chemical and microscopic examination of urine; analysis of fecal specimens, gastric, spinal fluid and other body fluids; quality control.

#### 416 (1-10) Clinical Hematology II

A continuation of Clinical Hematology I.

#### 417 (1-10) Clinical Immunohematology II

A continuation of Clinical Immunohematology I.

#### 418 (1-10) Clinical Chemistry II

A continuation of Clinical Chemistry I.

#### 419 (1-10) Clinical Microbiology II

A continuation of Clinical Microbiology I.

#### 420 (1-10) Clinical Microscopy II

A continuation of Clinical Microscopy I.

#### 499 (1-6) Individual Study

Related topics in medical technology.

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## Communication Disorders

*College of Allied Health & Nursing  
Department of Speech, Hearing and Rehabilitation Services  
103 Armstrong Hall • 507-389-1414  
Web site: [www.mnsu.edu/comdis/depthp/MSU\\_Dept\\_ComDis.html](http://www.mnsu.edu/comdis/depthp/MSU_Dept_ComDis.html)*

## Communication Disorders

Chair: Bruce J. Poburka

Cynthia Busch, Patricia Hargrove, Judith Kuster, Carol Myhre, Bruce Poburka, Wayne Quirk, Renee Shellum

The Communication Disorders Department provides a program for a major in communication disorders, pre-professional preparation in speech-language pathology or audiology, and supportive coursework for majors from other departments with interests in human communication or its disorders.

The beginning courses concern the normal aspects of speech, language and hearing—its nature and development, as well as introducing the student to the disorders of speech, language and hearing. Advanced courses are devoted to specific disorders in terms of their nature and treatment. The undergraduate training culminates with supervised practicum experiences in which the student works with people who have communication disorders. The Communication Disorders program is accredited by the Council on Academic Accreditation of the American Speech Language-Hearing Association.

**Admission to Major** is granted by the department. Students should seek admission to the program during their sophomore year. Full admission to the major requires a 3.0 average in the following courses: CDIS 212, 222, 292, 294. Majors cannot enroll in other CDIS coursework until these five courses have been passed with a 3.0 average. Application forms and complete information can be obtained from the department or during enrollment in CDIS 290, 222, 212.

Students planning to major in an area of study in the College of Allied Health and Nursing have an advisor from their area of interest assigned to them. Questions and concerns pertaining to advising and the assignment of advisors can be answered by Mark Schuck, student relations coordinator, 162 Highland Center, 507-389-5486.

### COMMUNICATION DISORDERS BA, BS

#### General Education Courses (12 credits):

Students must take at least one course in each of the following areas: Math, Biology, Physical Sciences, Social and Behavioral Sciences.

#### Required for Major (Core, 47 credits):

- CDIS 201 Observation of Human Communication (3)
- CDIS 212 Speech and Language Development (3)
- CDIS 220 Basic Audiology (3)
- CDIS 222 Speech and Hearing Science (3)
- CDIS 290 Introduction to Communication Disorders (3)
- CDIS 292 Phonetics (3)
- CDIS 294 Applied Anatomy and Physiology (3)
- CDIS 402 Child Language Disorders (2)
- CDIS 403 Child Language Disorders Lab (1)
- CDIS 416 Voice and Resonance Disorders (3)
- CDIS 417 Stuttering (3)
- CDIS 421 Aural Rehabilitation (3)
- CDIS 431 Orientation Lab (1)
- CDIS 434 Orientation to Clinical Practicum (2)
- CDIS 438 Speech Sound Disorders (3)
- CDIS 444 Appraisal and Diagnosis (3)

- CDIS 445 Grand Rounds Foundations (1)
- CDIS 446 Grand Rounds Presentations (1)
- CDIS 495 Clinical Practicum: Speech/Language (2)

#### Required for Bachelor of Arts (BA) degree ONLY:

Language (8 credits)

**Required Minor:** None.

### POLICIES/INFORMATION

Students completing course requirements under previous catalogs are advised to consult the department chairperson for appropriate course substitutions.

The minimum level of professional preparation in communication disorders requires the master's degree. The department does not recommend bachelor degree graduates for professional employment in the field nor for teacher or health licensure or registration.

The Department of Communication Disorders is accredited by the Council on Academic Accreditation (CAA) of the American Speech-Language Hearing Association (ASHA).

**GPA Policy.** A minimum GPA of 2.8 is required to enroll in practicum (CDIS 495).

Refer to the College regarding required advising for students on academic probation.

**P/N Grading Policy.** All courses must be taken for letter grades by majors except those offered on a P/N only basis.

### COURSE DESCRIPTIONS

#### 201 (3) Observation of Human Communication

Procedures for observing, describing, analyzing behaviors associated with human communication. Open to non-majors. F

#### 205 (3) Beginning Sign Language

The first in a sequence of courses which aim at the development of skills in the use of American Sign Language as a form of communication with persons who are hearing impaired or deaf. V

#### 206 (3) Intermediate Sign Language

The second in a sequence of courses which aim at the development of skills in the use of American Sign Language as a form of communication with persons who are hearing impaired or deaf.

Pre: CDIS 205 V

#### 207 (3) Advanced Sign Language

The third in a sequence of courses which aim at the development of skills in the use of American Sign Language as a form of communication with persons who are hearing impaired or deaf.

Pre: CDIS 206 V

#### 212 (3) Speech and Language Development

Acquisition and sequences of phonological, syntactical, morphological and semantic features of language across the lifespan. Theory and research. F



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## Communication Disorders

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### 220 (3) Basic Audiology

Functional anatomy of the ear, common pathologies, and measurement of hearing and sound.

Pre: CDIS 222 F

### 222 (3) Speech and Hearing Science

Anatomy and physiology of the hearing and speech mechanisms, signals and types of signal transmission relevant to hearing, and instrumentation/measurement pertaining to hearing.

Pre: Concurrent or completed college math. F

### 230 (2) Speech/Language Foreign Students

Modification of oral communication and listening of speakers who are learning English as a foreign language. Individualized, clinical model is employed. V

### 290 (3) Introduction to Communication Disorders

Classification and management of speech, language and hearing disorders. S

### 291 (1-4) Individual Study F, S

### 292 (3) Phonetics

Articulatory and acoustic phonetics. F

### 294 (3) Applied Anatomy and Physiology

Anatomy and physiology of respiration, phonation, articulation, and neuroanatomy. F

### 402 (2) Child Language Disorders

Types and characteristics of language disorders in children. F

### 403 (1) Child Language Disorders Lab

Lab associated with CDIS 402. Practice in applying course content to the language of children. F

### 416 (3) Voice and Resonance Disorders

Description, etiology, assessment and management of voice and resonance disorders. S

### 417 (3) Stuttering

Description, etiology, assessment and management of fluency disorders. S

### 421 (3) Aural Rehabilitation

Habilitative audiology and the instruction of the hearing-impaired, including hearing aids, speech reading and auditory training. S

### 424 (1) Overview of Dysphagia

This course presents the anatomy and physiology of the normal swallow and the normal development of oral motor and feeding skills. It describes signs, assessment, and treatment of feeding a swallowing problems in children and adults. V

### 426 (1) Advanced Diagnosis and Treatment of Dysphagia

This course presents assessment and therapy guidelines for dysphagia management. The team approach, actual case studies and video fluoroscopic studies will be presented. V

### 431 (1) Orientation Lab

Supervised observation of the diagnostic and remedial

management of speech and language disorders.

Pre: Concurrent enrollment in CDIS 434 S

### 434 (2) Orientation to Clinical Practicum

Procedures and operation of the clinical program in communication disorders.

Pre: Consent, concurrent enrollment in CDIS 431 S

### 435 (3) Augmentative Communication

A study of alternative and augmentative communication systems. Tests, measures and procedures for evaluation and management. V

### 438 (3) Speech Sound Disorders

Description, etiology, assessment and management of speech sound problems. F

### 444 (3) Appraisal and Diagnosis

Tests, measures, procedures and processes for the evaluation and diagnosis of speech and language. S

### 445 (1) Grand Rounds - Foundation

Observation of clinical case studies. V

### 446 (2) Grand Rounds - Presentations

Presentation of clinical case studies. V

### 490 (1-4) Independent Study F, S, SU

### 491 (1-6) Inservice

Study of a specific disorder or aspects of communication disorders that are not provided in the current curriculum.

### 495 (2) Clinical Practicum: Speech/Language

A practicum course designed to train the student to provide competent clinical services to persons with communication disorders. The student will develop skills to conduct diagnostic sessions, design and implement intervention plans and write clinical reports.

Pre: 3 of the following: 402, 416, 417, 438 (completion of or concurrent enrollment in 444). GPA of 2.8 in major courses. F, S

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## Computer & Information Sciences

*College of Science, Engineering & Technology*

*Department of Computer & Information Sciences*

273 Wissink Hall • 507-389-2968

Web site: [www.cset.mnsu.edu/cis](http://www.cset.mnsu.edu/cis)

Chair: Colin Wightman

Gregg Asher, Cyrus Azarbod, Lee Cornell, Cesar Guerra-Salcedo, David Haglin, Allan Hart, Dean Kelley, Ann Quade, Richard Roiger, Hamed Sallam, Julio Sanchez, Susan Schilling, James Slack, Mahbubur Syed, Leon Tietz, Christophe Veltsos, Michael Wells

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Bachelor's degree programs offered by the Department of Computer and Information Sciences prepare computer and information scientists for positions in computer-related fields. The department offers majors in Computer Science (CS), Computer Information Science (CIS), Man-

## Computer & Information Sciences

agement Information Systems (MIS), and three minors.

**MIS Note:** Management Information Systems (MIS) is a cross-disciplinary field of study which combines the technical aspects from computer science with the resource management techniques from business. To reflect the cross-disciplinary nature of this field, there are two MIS programs at MSU: one is offered in the Department of Computer and Information Sciences; the other offered in the Department of Management. Students who have an interest and an aptitude for the technical aspects of MIS should consider the MIS major in the Department of Computer and Information Sciences. This program has about two-thirds courses in the Department of Computer and Information Sciences and one-third Business courses. Students who have an interest and an aptitude for the resource management component of MIS should consider the Management major, MIS option in the Department of Management. This program has about two-thirds courses in the College of Business and one-third Computer and Information Sciences courses.

**Admission to Major** is granted by the department. Admission to the Major is required before the student is permitted to take 300- and 400-level courses. Requirements are:

- A minimum of 32 earned semester credits
- Completion of either MATH 180 or MATH 121 with a grade of C or better
- Completion of ENG 101 with a grade of C or better
- Completion of COMS 110 with a grade of "B" or better
- Completion of COMS 111 and COMS 112 with a grade of C or better and a GPA of 2.5 in these courses (or their equivalents).

### COMPUTER SCIENCE BS

#### Required General Education (7 credits):

ENG 101 Composition (4)  
SPEE 100 Fund. of Speech Communication (3)

#### Required Support Courses (7 credits):

ENG 271 Technical Communication (4)  
Choose one of the following Speech courses:  
101, 102, 202, 203, 315, 325, 333, or 403.

#### Required for Major (Core, 51 credits):

COMS 111 Fundamentals of Computer Science I (4)  
COMS 112 Fundamentals of Computer Science II (4)  
COMS 210 Data Structures and Algorithms (4)  
COMS 260 Assembly Language Programming (4)  
COMS 320 Computer Organization I (4)  
COMS 370 Concepts of Programming Languages (4)  
COMS 410 Abstract Machines and Grammars (4)  
COMS 460 Operating Systems (4)  
MATH 121 Calculus I (4)  
MATH 122 Calculus II (4)  
MATH 247 Linear Algebra I (4)  
STAT 354 Concepts of Probability and Statistics (3)  
MATH 375 Introduction to Discrete Mathematics (4)

#### Required Electives (COMS, 8 credits):

Choose two of the following courses:

COMS 202 Computers in Society (4)  
COMS 230 Intelligent Systems (4)  
COMS 280 Systems Analysis and Design (4)  
COMS 340 Database Management Systems I (4)  
COMS 350 Operations Research I (4)  
COMS 360 Systems Programming (4)  
COMS 371 Applications Programming (4)  
COMS 411 Parallel & Distributed Processing (4)  
COMS 412 Graphics (4)  
COMS 420 Computer Organization II (4)  
COMS 430 Artificial Intelligence (4)  
COMS 432 Robotics (4)  
COMS 440 Database Management Systems II (4)  
COMS 450 Operations Research II (4)  
COMS 462 Data Communications and Networks I (4)  
COMS 463 Data Communications and Networks II (4)  
COMS 470 Compiler Construction (4)  
COMS 481 Rapid Application Development (4)  
COMS 480 Software Engineering (4)  
COMS 497 Internship (4)

#### Required Electives (Science, 12 credits):

Choose one of the following sequences:

BIOL 105 General Biology I (4)\*  
BIOL 106 General Biology II (4) **or**  
CHEM 201 General Chemistry I (5)\*  
CHEM 202 General Chemistry II (5) **or**  
GEOL 121 Physical Geology (4)\*  
GEOL 122 Earth History (4)\* **or**  
PHYS 221 General Physics I (5)\*  
PHYS 222 General Physics II (5) **and**

Any class numbered 200 or above in Astronomy, Biology, Chemistry, Geology, or Physics or one class from another sequence listed above.

Elective xxx Elective xxx

\* May be used to fulfill General Education requirements.

**Required Minor: Yes. Any. Note that the Mathematics requirements specified above fulfill the requirements for a mathematics minor.**

### COMPUTER INFORMATION SCIENCE BS

#### Required General Education (10 credits):

ENG 101 Composition (4)  
SPEE 100 Fund. of Speech Communication (3)  
STAT 154 Elementary Statistics (3)

#### Required Support Courses (11 credits):

ENG 271 Technical Communication (4)  
Choose one of the following Speech courses:  
101, 102, 202, 203, 315, 325, 333, or 403.

Choose one course from the following:

MATH 121 Calculus I (4)  
MATH 180 Mathematics for Computer Science (4)

#### Required for Major (Core, 34 credits):

COMS 111 Fundamentals of Computer Science I (4)  
COMS 112 Fundamentals of Computer Science II (4)  
COMS 210 Data Structures and Algorithms (4)  
COMS 260 Assembly Language Programming (4)  
COMS 280 Systems Analysis and Design (4)

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## Computer & Information Sciences

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COMS 320 Computer Organization I (4)  
COMS 340 Database Management Systems I (4)  
COMS 497 Internship (6)

**Required Electives (Sequence, 12 credits):**

Choose three of the following courses:

COMS 202 Computers in Society (4)  
COMS 230 Intelligent Systems (4)  
COMS 350 Operations Research I (4)  
COMS 360 Systems Programming (4)  
COMS 370 Concepts of Programming Langs. (4)  
COMS 371 Applications Programming (4)  
COMS 411 Parallel & Distributed Processing (4)  
COMS 412 Graphics (4)  
COMS 420 Computer Organization II (4)  
COMS 430 Artificial Intelligence (4)  
COMS 432 Robotics (4)  
COMS 440 Database Management Systems II (4)  
COMS 450 Operations Research II (4)  
COMS 460 Operating Systems (4)  
COMS 462 Data Communications and Networks I (4)  
COMS 463 Data Communications and Networks II (4)  
COMS 470 Compiler Construction (4)  
COMS 480 Software Engineering (4)  
COMS 481 Rapid Application Development (4)

No more than one 200-level course can be part of the 12 elective credits.

**Required Minor: Yes. Any.**

**MANAGEMENT INFORMATION SYSTEMS BS**

**Required General Education (10 credits):**

ENG 101 Composition (4)  
SPEE 100 Fund. of Speech Communication (3)  
STAT 154 Elementary Statistics (3)

**Required Support Courses (11 credits):**

ENG 271 Technical Communication (4)  
Choose one of the following Speech courses:  
101, 102, 202, 203, 315, 325, 333, or 403  
Choose one course from the following:  
MATH 180 Mathematics for Computer Science (4)  
MATH 121 Calculus I (4)

**Required for Major (Core, 60 credits):**

COMS 111 Fundamentals of Computer Science I (4)  
COMS 112 Fundamentals of Computer Science II (4)  
COMS 210 Data Structures and Algorithms (4)  
COMS 280 Systems Analysis and Design (4)  
COMS 480 Software Engineering (4)  
COMS 340 Database Management Systems I (4)  
COMS 497 Internship (6)  
ACCT 200 Financial Accounting (3)  
ACCT 210 Managerial Accounting (3)  
BLAW 371 Computer and Technology Law (3)  
FINA 362 Business Finance (3)  
IBUS 380 Principles of International Business (3)  
MGMT 200 Introduction to MIS (3)  
MGMT 330 Principles of Management (3)  
MGMT 346 Production and Operations Management (3)  
MGMT 458 Corporate Information Systems (3)  
MRKT 310 Principles of Marketing (3)

**Required Electives (Sequence, 16 credits):**

Choose four of the following courses:

COMS 202 Computers in Society (4)  
COMS 230 Intelligent Systems (4)  
COMS 260 Assembly Language Programming (4)  
COMS 320 Computer Organization I (4)  
COMS 350 Operations Research I (4)  
COMS 360 Systems Programming (4)  
COMS 370 Concepts of Programming Langs. (4)  
COMS 371 Applications Programming (4)  
COMS 411 Parallel & Distributed Processing (4)  
COMS 412 Graphics (4)  
COMS 420 Computer Organization II (4)  
COMS 430 Artificial Intelligence (4)  
COMS 432 Robotics (4)  
COMS 440 Data Management Systems II (4)  
COMS 450 Operations Research II (4)  
COMS 460 Operating Systems (4)  
COMS 462 Data Communications and Networks I (4)  
COMS 463 Data Communications and Networks II (4)  
COMS 470 Compiler Construction (4)  
COMS 481 Rapid Application Development (4)

No more than one 200-level course can be part of the 16 elective credits.

**Required Minor: None.**

**COMPUTER SCIENCE MINOR**

**Required for Minor (Core, 20 credits):**

COMS 111 Fundamentals of Computer Science I (4)  
COMS 112 Fundamentals of Computer Science II (4)  
COMS 260 Assembly Language Programming (4)  
COMS 320 Computer Organization I (4)  
COMS 210 Data Structures and Algorithms (4)

**COMPUTER INFORMATION SCIENCE MINOR**

**Required for Minor (Core, 20 credits):**

COMS 111 Fundamentals of Computer Science I (4)  
COMS 112 Fundamentals of Computer Science II (4)  
COMS 280 Systems Analysis and Design (4)  
COMS 340 Database Management Systems I (4)  
Choose one course from the following:  
COMS 260 Assembly Language Programming (4)  
COMS 320 Computer Organization I (4)

**COMPUTER TECHNOLOGY MINOR**

**Required for Minor (Core, 20 credits):**

COMS 111 Fundamentals of Computer Science I (4)  
COMS 280 Systems Analysis and Design (4)  
Choose one course from the following:  
COMS 321 Micro Configuration and Maintenance (4)  
COMS 200 Microcomputer Applications (4)  
Choose any two 300-400 level courses (one of which may be either COMS 112 or COMS 202).

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**POLICIES/INFORMATION**

**GPA Policy.** A GPA of 2.5 or higher in courses required for a major or minor in the Department of Computer and Information Sciences is required for graduation. This GPA re-

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## Computer & Information Sciences

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quirement is calculated and must be maintained for each of the following areas: 1) for the combined Required General Education and Required Support Courses, or their substitutions, if any; 2) for the Required for Major and Required Electives courses. When pursuing the Management Information Systems major, this second requirement must be maintained in the COMS component of the major as well as in the overall major. It is recommended that students who cannot maintain a GPA of 3.0 in required 100 and 200 level courses see their advisor for a program review.

Refer to the College regarding required advising for students on academic probation.

**P/N Grading Policy.** All Required for Major and Required Elective Courses, with the exception of any internship courses, must be taken for letter grades. Exceptions to this policy will be made on a limited basis and must be approved in writing by the chairperson of the department. When calculating the GPA (see GPA Policy) for the Required General Education and the Required Support Courses, one of these courses may be taken P/N and thus excluded from the GPA calculation. Any additional courses with a P grade will be included in this GPA calculation as a C. A grade of C or better must be obtained in all courses listed as pre-requisites, unless a different criteria is specified.

An incomplete grade for a course will generally be given only under two conditions. The first condition is illness — a doctor's written recommendation must be supplied. The second condition arises when a death in the student's family has caused the student to be away from the campus for an extended period of time. The student must have a satisfactory grade (C or better) in the course at the time of the onset of the condition.

The Department of Computer and Information Sciences continuously strives for improvements in the academic program. Coursework, coupled with extensive laboratory experience, play an important part in the student's educational program. However, application of the concepts discussed in class to on-the-job situations is equally important. As a result, the department requires an internship for all CIS and MIS majors.

COMS 100, 101, 160, 171, 492, and 493 do not count toward a major or minor in the computer and information sciences.

**Residency:** At least 50 percent of the computer and information sciences credits required for a major or minor from this department must be earned at Minnesota State University, Mankato.

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### COURSE DESCRIPTIONS

#### 100 (4) Introduction to Computer Science

Provides a basic foundation in computer concepts and literacy. Topics include the development of computers, hardware, software, and their social implications. Course includes a hands-on lab which introduces students to various systems and applications software in-

cluding graphical user interfaces, word-processing, drawing and painting programs, electronic mail, the Internet, spreadsheets, and databases. F, S

#### 101 (3) Introduction to Microcomputers

An introductory course in personal computer use for business majors. Provides an understanding of what personal computers are, how they are controlled, and their usefulness in the business world. Lab work includes work on word-processing, spreadsheets, presentation packages, communications and graphics. Does not apply for major credit in computer science. F, S

#### 110 (4) Foundations of Computer Science

Provides a comprehensive introduction to the algorithmic foundations of computer science, computer hardware, computer software, computer applications, and social issues. Lab work develops familiarity with a variety of software and hardware. Intended to provide knowledge and skills applicable to all disciplines while providing specialized preparation for further study in Computer & Information Sciences.

Co-Req: MATH 112

F, S

#### 111 (4) Fundamentals of Computer Science I

The first course in a two-course sequence for students who are planning to major or minor in computer science. Emphasizes concepts that provide a basic background for continuing study in computer science. High-level language programming, use of abstraction in program design.

Pre: MATH 112 and a B or better in COMS 110 or equivalent F, S

#### 112 (4) Fundamentals of Computer Science II

A continuation of 102. Introduction to object-oriented programming techniques and essential data structures such as stacks and queues.

Pre: COMS 111

F, S

#### 160 (1) Introduction to Selected Operating System

Terminal operation methods. Creation, manipulation and editing of files using a selected operating system, such as VAX-MS, WINDOWS, MS-DOS, UNIX, AS/400. May be repeated for different operating systems. V

#### 171 (2) Introduction to C++ Programming

This course provides an introduction to programming using C++. Emphasis on structured programming concepts, with a brief discussion of object-oriented programming. Control structures, expressions, input/output, arrays, and functions. F, S

#### 200 (4) Microcomputer Applications

Using both a lecture and lab environment, this course seeks to provide students with additional personal computer experience on both IBM and Macintosh platforms in these areas: operating systems, graphics, WWW page development, telecommunications, utility software, networking, file transfer, presentation software.

Pre: COMS 100, 110, or 101 or consent of instructor

F

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## Computer & Information Sciences

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### **201 (2) Introduction to Assistive Technology**

This course introduces students to assistive technology and its applicability to people with various disabilities. Hardware and software demonstrations with an emphasis placed on inexpensive and readily available solutions. Extensive use of the Internet will be employed to keep current with latest technology and to facilitate a continuing dialogue with instructor. V

### **202 (4) Computers in Society**

This course seeks to confront participants with complex social and ethical issues associated with computers. Through thoughtful questions, informative readings, and the analysis of dichotomous viewpoints, courses participants will gain insight into the complexity of technology-related issues discussed as well as the lack of simplistic solutions to the problems. F, S

### **210 (4) Data Structures and Algorithms**

Study of trees, hashing, and graph algorithms. Analysis of algorithms, memory management, and proof techniques. Pre: COMS 112, MATH 180 or 121 F, S

### **230 (4) Intelligent Systems**

The course offers an introduction to artificial intelligence problem solving with an emphasis on data mining and rule-based expert systems. Supervised and unsupervised data mining algorithms are detailed. The student is exposed to several data mining tools and is provided with hands-on data mining experience in a laboratory setting. The student is also required to build a simple shell. Experience with a programming language is not necessary. Pre: COMS 100, 101, or 110 F

### **260 (4) Assembly Language Programming**

Assembly language programming techniques. Machine level data representations, instructions, and addressing modes. Accessing operating system facilities using assembly language, writing and using macros. Pre: COMS 112 F, S

### **270 (1-4) Introduction to Selected Programming Language**

This course provides an overview of a selected high-level programming language. Special features of the language will be emphasized, along with its control structures, input/output, storage structures, and abstraction mechanisms. May be repeated for different languages. Pre: COMS 111 V

### **271 (4) C++ Programming**

This is a course in application programming that introduces the students to all important aspects of the discipline. The main purpose of this course is to simulate large scale application development. Students will be introduced to application programming and COBOL, but the emphasis of the course will be on principles of application programming such as control breaks, tables, files, sorting, sub-programming, index-sequential files, and large scale development. V

### **272 (4) FORTRAN Programming**

To learn the algorithmic programming language FOR-

TRAN to solve scientific, engineering and mathematical problems.

Pre: COMS 100 or 111

V

### **280 (4) Systems Analysis and Design**

This course explores both structured as well as object oriented systems analysis and design. Use of upper and lower CASE tools are employed in the analysis, design and implementation of a team oriented term project.

Pre: COMS 111

F, S

### **320 (4) Computer Organization I**

Introduction to computer hardware and its design including Boolean logic, basic digital circuits, number representations and digital arithmetic, instruction set design, digital storage, performance metrics, processor datapath and control, pipelining, memory hierarchy, busses and I/O interfacing, parallel processors.

Pre: COMS 112, MATH 180 or 121

F, S

### **321 (4) Micro Configuration and Maintenance**

Provides a working knowledge and hands-on experience with configuring, upgrading, optimizing, troubleshooting and repairing personal computer hardware, networks and system software. Preventative maintenance and emergency recovery techniques.

Pre: Jr/Sr status or consent

F

### **340 (4) Database Management Systems I**

Introduction to the concept of database systems; database models; database management systems; file organization; design of databases using data modeling and normalization; conversion of data model into relational, network, and hierarchical data models; extensive coverage of SQL and implementation of an application using a relational database in a team environment.

Pre: COMS 280

F, S

### **350 (4) Operations Research I**

A first course in decision theory and linear programming. Topics covered include problem modeling, decision analysis, forecasting, inventory systems, and linear programming, including the SIMPLEX method, duality, sensitivity analysis, and various applications such as the transportation problem, network flow problems, and project management.

Pre: COMS 112, MATH 180 or 121, and STAT 154

V

### **360 (4) Systems Programming**

Machine level I/O and operating system file processing. Structure of systems programs including assemblers, linkers, and object oriented utilities and interfaces. Writing utility programs and extensions to an operating system.

Pre: COMS 260

V

### **370 (4) Concepts of Programming Languages**

A comparative approach to general concepts of current higher-level programming languages. Various programming language paradigms will be covered, including imperative, object-oriented, functional, and logical.

Pre: COMS 210

S



## Computer & Information Sciences

### 371 (4) Applications Programming

This course emphasizes structured applications development concepts using COBOL with an introduction to object-oriented COBOL programming. Topics including program structure, table and file manipulation, interactive programming, sub programming and object orientation. Team projects are used throughout the semester.

Pre: COMS 112 S

### 410 (4) Abstract Machines and Grammars

This course studies the computational ability of a variety of computational models including finite state machines, regular expressions, context-free grammars, and Turing machines. For each model, the student will develop, study and apply techniques for determining those languages which are computable using the particular model.

Pre: MATH 375 F

### 411 (4) Parallel and Distributed Processing

Practical parallel programming experiences. Parallel programming languages, parallel algorithm design and analysis, parallel architectures.

Pre: COMS 210 ALT

### 412 (4) Graphics

Concepts and algorithms used in computer graphics, including polygonal and curved images in both 2 and 3 dimensions, representation of solid objects, and color and illumination models.

Pre: COMS 210, MATH 247 ALT

### 420 (4) Computer Organization II

Advanced topics in computer architecture including a major emphasis on measuring and improving computer performance. Topics include advances in pipelining and analysis and optimization of storage systems and networks, multiprocessor challenges and trends.

Pre: COMS 320 V

### 430 (4) Artificial Intelligence

Artificial intelligence problem solving techniques including predicate logic and the resolution principle. Artificial intelligence programming languages, machine learning, neural network models and object oriented methods are discussed.

Pre: COMS 230 S

### 432 (4) Robotics

Current practice and future directions in robotics including robot anatomy, kinematics, sensors, sensor interfacing and fusion, mobile robotics, real-time programming, vision and image processing algorithms, subsumption architecture.

Pre: COMS 260 or 320 S

### 440 (4) Database Management Systems II

Extensive coverage of query processing and optimization; concurrence control and recovery and security and integrity in centralized/distributed environments. Team-oriented projects in heterogeneous client server environment.

Pre: COMS 112 and 340 F, S

### 450 (4) Operations Research II

A second course in operations research for majors and non-majors. Topics include computer simulation, game theory, stochastic processes, queuing theory, Markov processes, and reliability. Simulation topics include Monte Carlo methods, discrete and continuous simulations, simulation languages and packages.

Pre: COMS 350 and STAT 354 V

### 460 (4) Operating Systems

This course covers basic operating systems concepts including processes, interprocess communication, interprocess synchronization, deadlock, memory allocation, segmentation, paging, resource allocation, scheduling, performance evaluation, file systems, storage, devices, protection, security, privacy and distributed systems.

Pre: COMS 320 F

### 462 (4) Data Communications and Networks I

An introduction to the basic foundations of computer networking. The course encompasses telecommunications, local area networks, wide area networks, and wireless communication. Topics covered include the OSI model, TCP/IP, network topologies and associated hardware, error detection and correction, protocols, and security.

Pre: COMS 112 F, S

### 463 (4) Data Communications and Networks II

This course concentrates on providing system administration and client/server development experience. It uses the client/server networking lab to provide exposure to Netware, Windows NT and UNIX network operating systems as well as client/server applications development.

Pre: COMS 462 (recommended) and COMS 280 F, S

### 470 (4) Compiler Construction

Principles and techniques of compiler construction. Development of efficient parsers and scanners; manual and automatic approaches. Optimization techniques and code generation.

Pre: COMS 370 V

### 480 (4) Software Engineering

This is a course in software engineering that introduces the student to all important aspects of the discipline. The main purpose of this course is to simulate the engineering of a software product, from gathering requirements through implementation and maintenance. The course emphasizes a traditional development methodology. Students will be introduced to Visual Basic and Microsoft Project, but the emphasis of the course will be on principles of software engineering including project planning, requirements gathering, size and cost estimation, analysis, design, coding, testing, and implementation.

Pre: COMS 280 and 340 F, S

### 481 (4) Rapid Application Development

In-depth understanding of low and high CASE tools and rapid application development. CASE tools will range from the traditional software development life cycle to object-oriented client/server environments. Extensive team-oriented applications will be developed using tools

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## Computer & Information Sciences

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such as SYNON, OBSYDIAN, Power Builder, and MS-SQL server.

Pre: COMS 340 V

### 490 (1-8) Computer Science Workshop

Workshops vary in content as announced in class schedule.

Pre: Consent V

### 491 (1-6) In-Service in Computer Science

This course is designed to meet the needs of kindergarten through twelfth grade practicing teaching majors who wish to enhance their technology-related skills and knowledge. Both lab and lecture activities are used to provide participants guided experiences with current applications of technology.

Pre: Consent V

### 492 (3) Computers in the Classroom

Using both a lecture and lab format, this course provides students with a foundation for developing computer-delivered instruction within the classroom by examining the hardware and software which are part of emerging technologies, and the research issues associated with the developing effective instruction using the computer.

Pre: Senior status V

### 493 (3) Computer Based Instructional Systems

This course provides participants with opportunities to develop, implement, and assess formative and summative evaluation instruments; identify researchable issues in computer-delivered instruction; develop computer-delivered instruction using a sophisticated authoring tool.

Pre: Senior status V

### 495 (1) Seminar in Computer Science

Provides Computer Science majors and minors an opportunity to explore a topic not normally covered in the curriculum in a small-group setting.

Pre: Consent F, S

### 496 (1-4) Selected Topics in Computer Science

Special topics not covered in other courses. May be repeated for credit on each new topic.

Pre: Consent V

### 497 (1-12) Internship

This course is designed to provide students with an opportunity to utilize their training in a real-world business environment. Participants are placed and supervised in selected locations by the internship coordinator for a minimum period of one semester while working under the guidance and direction of a full-time staff member. (At most 6 hours toward a major in this department)

Pre: Admission to the CS, CIS, or MIS major, completion of the required General Education and support courses, completion of Computer Science core and consent.

F, S

### 499 (1-2) Individual Study

Problems on an individual basis.

Pre: Consent F, S

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## Computer Engineering

*College of Science, Engineering & Technology*

*Department of Electrical and Computer Engineering and Technology*

137 Trafton Science Center S • 507-389-5747

Web site: [www.ee.mnsu.edu](http://www.ee.mnsu.edu)

Chair: Bill Hudson, Ph.D.

Program Coordinator: Rajiv Kapadia, Ph.D.

Carl Gruber, Ph.D., Tom Hendrickson, Ph.D., Han-Way Huang, Ph.D., Bill Hudson, Ph.D., Rajiv Kapadia, Ph.D., Muhammad Khaliq, Ph.D., Paul Lindfors, Ph.D., Julio Mandojana, Ph.D., Ramakrishna Nair, Ph.D., George O'Clock, Ph.D.

Computer Engineering (CE) encompasses the research, development, design and operation of computers and computerized systems and their components. The primary objective of the Computer Engineering program is to educate engineering professionals who possess a sound design and analytical background coupled with a strong laboratory experience. This means that the department expects to prepare its graduates equally for:

1. Entry into the engineering work environment with well developed design and laboratory skills.
2. Further study toward advanced degrees in engineering and other related disciplines.
3. Advancement into managerial ranks and/or entrepreneurial endeavors.

In support of this objective, the program provides a curriculum including the following components:

1. A strong background in the physical sciences, mathematics, and the engineering sciences including extensive hands-on laboratory instruction.
2. An integrated design component to the curriculum including instruction in basic practices and procedures, creativity, control, economics, and synthesis. The process begins with basic instruction during the freshman year and concludes with a capstone design project.
3. A choice of several subdisciplines in their senior level elective.
4. Courses in business and economics to promote awareness of management and the economic aspects of engineering.
5. Preparation for continuing study and professional development.

The curriculum offers students the opportunity to emphasize a number of specialized areas including advanced digital systems, communications, digital signal processing, networking, and system design.

The recommended high school preparation is two years of algebra, one year of geometry, one-half year of trigonometry, one-half year of college algebra, and a year each of physics and chemistry plus a programming language. Without this background it may take students longer than four years to earn a degree. During the first two years students take science and mathematics courses

## Computer Engineering

common to all branches of engineering (pre-engineering), as well as supporting work in English, humanities, and social sciences. Second-year computer engineering students complete physics, mathematics and 200-level engineering and computer science courses.

**Admission to Major.** Admission to the college is necessary before enrolling in non-engineering 300- and 400-level courses. Admission to the college is granted by the department. Minimum college requirements are:

- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.00 (C).

Please contact the department for application procedures.

During spring semester of the sophomore year, students should submit an application form for admission to the junior-level computer engineering program. Admission to the program is selective and, following applications to the department, subject to approval from the faculty. The department makes a special effort to accommodate transfer students and has joint admissions agreements with many community colleges. Only students admitted to the program are permitted to enroll in upper-division engineering courses. No transfer credits are allowed for upper-division engineering courses except by faculty review followed by written permission.

Before being accepted into the program and admitted to 300-level engineering courses (typically in the fall semester), a student must complete a minimum of 48 semester credits as follows:

- General Physics (calculus-based) (10 credits)
- Calculus, Differential Equations, Probability & Statistics (15 credits)
- Electrical Engineering Circuit Analysis I and II (including laboratory) (7 credits)
- Chemistry (5 credits)
- English Composition (4 credits)
- Computer Sciences (Java and C++) (6 credits)

A cumulative GPA of 2.5 for all science and math courses must have been achieved for program admittance. Grades must be "C" or better for courses to be accepted.

**GPA Policy.** Students graduating with a degree in Computer Engineering must have:

- 1) completed a minimum of 20 semester credit hours of upper division EE and COMS courses at MSU.
- 2) have a cumulative GPA of 2.25 on all upper division EE and COMS courses, and
- 3) have completed their senior design sequence at MSU.

**P/N Grading Policy.** A student who majors in CE must elect the grade option for all required courses including general education courses listed by number even if offered by another department.

### COMPUTER ENGINEERING BS

**Required for Major (Prerequisites, 61 credits):**

CHEM	201	General Chemistry I (5)
COMS	110	Fundamentals of Computer Sci. (4)
COMS	111	Fundamentals of Computer Sci. II (4)

COMS	112	Fundamentals of Computer Sci.III (4)
COMS	171	Intro. to C++ Programming (2)
EE	230	Circuit Analysis I (3)
EE	231	Circuit Analysis II (3)
EE	240	Evaluation of Circuits (1)
EE	244	Intro. to Digital Systems (2)
EE	254	Digital and Circuits Lab (1)
ENG	101	Composition I (4)
ENG	271	Technical Communication (4) <b>or</b>
SPEE	233	Public Speaking for Technical Professionals (3) <b>or</b>
SPEE	102	Public Speaking (3)
MATH	121	Calculus I (4)
MATH	122	Calculus II (4)
MATH	321	Ordinary Differential Equations (4)
MATH	354	Concepts of Probability and Statistics (3) <b>or</b>
ME	291	Engineering Analysis (3)
PHYS	221	General Physics I (5)
PHYS	222	General Physics II (5)

**Required for Major (additional General Studies)**  
**Additional Supporting Studies (13 credits)**

Choose a minimum of 13 credits from the following Humanities and Social Sciences courses:

#### Humanities (6-7 credits)

Courses acceptable by department or program include: ART 160, 260, 261, 413, 416, 419, 460, 462, 463, 466, 469; ENG 112, 113, 114, 320, 321, 325, 327, 328, 331, 332, 400, 401, 402, 403, 405, 406, 416, 478, 479, 481; FOREIGN LANGUAGE 200 level or above; HIST all except 490 and higher; HUM 150, 155, 250\*, 251, 280, 281, 282; MASS 110, 411, 412; MUS 120, 125, 126, 220, 221, 222, 422, 423, 424, 425, 426, 429, 432; PHIL all except 490 and higher; SPEE 100-203, 300, 315-403, 412, 413; THEA 100, 252, 283, 285, 481, 482.

\* Note: EET 125 may be substituted for HUM 250

#### Social Sciences (6-7 credits)

Courses accepted by department or program include: ANTH all courses except 480 and above; GEOG 100, 101, 103, 340, 341, 425, 430, 435, 437, 445, 446, 450, 454, 456; POL all except 420, 421, 422, 490 and above; PSYC all except 201, 202, 291, 303, 390, 391, 473 and above; SOC all except 201, 202, 466, 469, 470, 485 and above; URBS all except 301, 302, 481 and above; WOST all except 260, 277, 290, 320, 430, 460 and above.

In general, graduation credits toward the humanities requirement is not allowed for any course in subject areas such as speech communication, writing, art, music or theater that involve performance or practice of basic skills.

At least 3 credits of the courses selected to complete the above requirements must be 300-level or above. At least one 300-level course must follow a lower level course in the same subject area.

In addition, you must select one course from the following:

ECON	201	Principles of Macroeconomics (3)
ECON	202	Principles of Microeconomics (3)

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## Computer Engineering

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### Required for Major (Engineering Plus Computer Science, 52-53 credits):

COMS 210 Data Structures and Algorithms (4)  
COMS 280 Systems Analysis and Design (4)  
COMS 360 Systems Programming (4) **or**  
COMS 432 Robotics (4)  
COMS 460 Operating Systems (4)  
COMS 462 Data Communications and Networks I (4)  
EE 250 Engineering Economics (2)  
EE 332 Electronic Circuits and Devices (4)  
EE 333 Digital and Analog Electronic Systems (4)  
EE 334 Microprocessor Engineering (3)  
EE 337 Principles of Engineering Design (1)  
EE 342 Electronics Design Laboratory (1)  
EE 344 Design and Evaluation of Microprocessors (1)  
EE 353 Communication Systems Engineering (2)  
EE 363 Communication Systems Laboratory (1)  
EE 380 Advanced Digital System Design (2)  
EE 462 Advanced Digital System (4)  
EE 467 Principles of Engineering Design I (2)  
EE 477 Principles of Engineering Design II (2)  
EE 453 Advanced Communications Systems Engineering (3) **or**  
EE 484 VLSI Design (4)

### Required Minor: None.

**GPA:** A cumulative grade-point average of 2.5 for all science, math and engineering courses must have been maintained. Grades must be C or better for course to be accepted. MSU students should complete the pre-engineering courses listed under the major.

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### COURSE DESCRIPTIONS

#### Computer Science:

##### **110 (4) Introduction to Computer Science**

Provides a comprehensive introduction to the algorithmic foundations of computer science, computer hardware, computer software, computer applications, and social issues. Lab work develops familiarity with a variety of software and hardware. Intended to provide knowledge and skills applicable to all disciplines while providing specialized preparation for further study in Computer & Information Sciences.

Co-Req: MATH 112 F, S

##### **111 (4) Fundamentals of Computer Science I**

The first course in a two-course sequence for students who are planning to major or minor in computer science, computer engineering, or computer engineering technology. Emphasizes concepts that provide a basic background for continuing study in computer science. High-level language programming, use of abstraction in program design.

Pre: MATH 112 and COMS 110 or equivalent. F, S

##### **112 (4) Fundamentals of Computer Science II**

A continuation of COMS 111. Introduction to object oriented programming techniques and essential data structures such as stacks and queues.

Pre: COMS 111 F, S

##### **171 (2) Introduction to C++ Programming**

This course provides an introduction to programming using C++. Emphasis on structured programming concepts, with a brief discussion of object-oriented programming. Control structures, expressions, input/output, arrays, and functions. F, S

##### **210 (4) Data Structures and Algorithms**

Study of trees, hashing, and graph algorithms. Analysis of algorithms, memory management, and proof techniques.

Pre: COMS 103, MATH 180 or 121 F

##### **280 (4) Systems Analysis and Design**

This course explores both structured as well as object oriented systems analysis and design. Use of upper and lower CASE tools are employed in the analysis, design and implementation of a team oriented term project.

Pre: COMS 102 F, S

##### **360 (4) Systems Programming**

Machine level I/O and operating system file processing. Structure of systems programs including assemblers, linkers, and object oriented utilities and interfaces. Writing utility programs and extensions to an operating system.

Pre: COMS 260 ALT

##### **460 (4) Operating Systems**

This course covers basic operating systems concepts including processes, interprocess communication, interprocess synchronization, deadlock, memory allocation, segmentation, paging, resource allocation, scheduling, performance evaluation, file systems, storage, devices, protection, security, privacy and distributed systems.

Pre: COMS 320 F

##### **462 (4) Data Communications and Networks I**

Computer communication networks. OSI model. Local area networks. Data transmission strategies. Error detection and recovery. Flow control.

Pre: COMS 103 F

#### Electrical Engineering:

##### **101 (1) Introduction to Engineering I**

Discussion of historical, educational, and professional aspects of engineering. Problem solving, study approaches and techniques, and the motivation behind modern engineering education and practices. Lab sessions cover the basics of word processing, spreadsheets, databases, drawing, and graphing programs. F

##### **230 (3) Circuit Analysis I**

This course is meant to develop Electrical Engineering Circuit Analysis skills in DC and AC circuits. It includes circuit laws and theorems, mesh and node analysis, sinusoidal steady state analysis, impedance/admittance concepts, resonant circuits, frequency response, and first order circuit transients.

Pre: PHYS 222 or concurrent; MATH 321 or concurrent F

##### **231 (3) Circuit Analysis II**

Continuation of Circuit Analysis I to include special topics in circuit analysis.

Pre: EE 230 and 240 S

## Computer Engineering

### 240 (1) Evaluation of Circuits

Laboratory support for EE 230. Experimental evaluation of circuits including operational amplifier circuits. Verification of the theoretical concepts covered in EE 230 will be realized in the laboratory.

Pre: Must take concurrently with EE 230 F

### 244 (2) Introduction to Digital Systems

A study of theoretical and practical aspects of digital systems including Boolean algebra, number systems, logic devices, Karnaugh maps, and sequential machines.

Pre: MATH 122 S

### 250 (2) Engineering Economics

Overview of accounting and finance and their interactions with engineering, manufacturing, marketing, R&D and sales. Lectures include the development and analysis of financial statements, time value of money, decision making tools (stochastic and non-stochastic), ratio analysis, cost of capital, cash flow, rate of return and forecasting techniques.

F

### 254 (1) Digital and Circuits Lab

Laboratory support for EE 231 and EE 244. Experimental evaluation of AC and transient circuits, digital logic devices including logic gates, flip flops, and sequential machines. Some simulation and testing of PAL devices and memory IC's.

Pre: EE 230, 240 and concurrently with EE 231 and 244 S

### 332 (4) Electronic Circuits and Devices

Electronic amplifier concepts and real operational amplifier networks. Semiconductor device characteristics including Diodes, BJT's, JFET's, MOSFET's, and GaAsFET's. Also discuss DC bias circuits, along with small signal, large signal, and PSPICE device modeling and analysis. Small-signal amplifiers (single and multi-stage), power amplifiers, differential amplifiers, and feedback amplifiers, concepts and design will all be discussed.

Pre: EE 231, admission to EE program F

### 333 (4) Digital and Analog Electronic Systems

EE electronics sequence with EE 332. Feedback systems/stability; oscillator concepts and systems. Filters and tuned amplifiers. Design of IC operational amplifier. Hysteresis, bi-stability and nonlinear functional circuits; 555 timer. A/D and D/A converters. MOS and bipolar digital electronic circuits; memory. Electronic noise. Power switching devices.

Pre: EE 332 S

### 334 (3) Microprocessor Engineering

Use of microprocessors and microcontrollers in engineering applications. Topics include assembly language programming, smart and programmable controllers, memory design including dynamic memory and direct memory access, bus standards and protocol, serial and parallel I/O, interfacing with other programmable systems, maskable and non-maskable interrupts.

Pre: EE 244 F

### 337 (1) Principles of Engineering Design

Application of the design techniques in the engineering profession. Electrical engineering project and program management and evaluation including computer assisted tools for planning and reporting, design-to-specification techniques and economic constraints.

Pre: Admission to EE program S

### 342 (1) Electronics Design Laboratory

Properties of materials; measurement of electronic device characteristics. Experimental evaluation of electronic amplifier designs. Experimental characteristics of feedback topologies; oscillator and op-amp circuit design and design verification. Power amplifier graphical design.

Pre: EE 231 and 332 taken concurrently F

### 344 (1) Design and Evaluation of Microprocessors

Laboratory support for EE 334. Study of various single board computers through assembly language programming. Basic input/output, ports, memory, addressing, timers, A/D converters, serial and parallel communication protocol, and interrupt processing. One half design credit.

Pre: Concurrent with EE 334 F

### 353 (2) Communication Systems Engineering

Signals and Systems, Fourier transforms, Parseval's theorem. Autocorrelation functions and spectral density functions. Information theory. Noise and noise figure, probability and statistics. Transformation of random variables, probability of error and bit error rate. Modulation and demodulation. Overview of analog, sampled analog and digital communication systems. Spread spectrum systems.

Pre: EE 333 S

### 363 (1) Communication Systems Laboratory

Measurement techniques using the oscilloscope, spectrum analyzer and network analyzer. Signals and spectra. Frequency response. Noise and noise figure measurements. Intermodulation products. Amplitude and frequency modulation/demodulation. Sampling, aliasing, and intersymbol interference. Bit error measurement.

Pre: Concurrent with EE 353 S

### 380 (2) Advanced Digital System Design

Combinatorial circuit design with Karnaugh map and tabular method; using MSI chip as building blocks in a digital system; circuits of latches, flip-flops, and registers; design of counters; types of sequential circuits; design process of sequential circuits; minimization of sequential circuit design by performing state reduction and state encoding optimization; syntax and semantics of VHDL language; using VHDL in modeling and simulation digital circuits; implementation of digital system in complex programmable logic devices (CPLDs).

F

### 453 (3) Advanced Communications Systems Engineering

Fundamentals of RF, microwave, and optical communications Systems. Advanced information theory. Digital modulation techniques. Phase-locked loop receivers and frequency



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## Computer Engineering

synthesizers. Characterization of digital data transmission systems. Equalization. Synchronization. Coding. Data compression. Nonlinear systems analysis. Amplitude and phase distortion. AM-PM conversion. Intermodulation and cross-modulation. Advanced spread spectrum systems.  
Pre: EE 353 and 363 F

### 462 (4) Advanced Digital System

A study of finite state machine design, hardware description language, principles of instruction execution, instruction pipe lining, superscalar processor design, multiprocessor systems and memory system design.  
Pre: EE 333 and 334 F

### 467 (2) Principles of Engineering Design I

Design and organization of engineering projects. Project proposals, reporting, feasibility studies, and interpretation. Specification preparation, interpretation, and control. Issues involving creativity, project planning and control, and intellectual property rights. Students enrolled in this course must initiate and complete a design project in a small team format.  
Pre: EE 337 and senior standing F

### 477 (2) Principles of Engineering Design II

Completion of design projects and reports. Lectures on ethics, issues in contracting and liability, concurrent engineering, ergonomics and environmental issues, economics and manufacturability, reliability and product lifetimes. Lectures by faculty and practicing engineers.  
Pre: EE 467 S

### 481 (1) VLSI Design Laboratory

Laboratory to accompany EE 484 VLSI design. Individual IC design projects will be assigned using IC layout tools and simulation software. Culminates in a group project fabricatable under MOSIS.  
Pre: Concurrent with EE 484 S

### 484 (4) VLSI Design

VLSI technology. MOS and Bipolar transistor theory, SPICE models. Transistor structure and IC fabrication processes; layout design rules. Custom CMOS/BICMOS logic design and layout topologies; cell layout/chip partitioning/clocking. Bipolar/MOS analog circuit design and layout. Group design project. Library research study.  
Pre: EE 333 S

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## Computer Engineering Technology

*College of Science, Engineering & Technology  
Department of Electrical and Computer Engineering and Technology*

137 Trafton Science Center S • 507-389-5747

Chair: Bill Hudson, Ph.D.

Program Coordinator: Lindsay Hess, Ph.D.

Carl Gruber, Ph.D., Tom Hendrickson, Ph.D., Lindsay Hess, Ph.D., Han-Way Huang, Ph.D., Bill Hudson,

Ph.D., Rajiv Kapadia, Ph.D., Muhammad Khaliq, Ph.D., Paul Lindfors, Ph.D., Julio Mandojana, Ph.D. Ramakrishna Nair, Ph.D., George O'Clock, Ph.D.

Computer Engineering Technology is a technological field requiring the application of scientific and engineering knowledge and methods, combined with technical skills, in support of computer activities. A computer engineering technologist is a person who is knowledgeable in computer hardware and software theory and design and who can apply them to a variety of industrial and consumer problems. Computers, controls/automation, robotics, instrumentation, and communications are just a few fields open to computer engineering technologists.

The program strives to prepare students for successful entry into the technical workforce. This means that the curriculum prepares students to:

1. Apply knowledge of mathematics, science, and computer engineering to problems.
2. Design and construct experiments and analyze and interpret the resulting data.
3. Design systems, components, or processes to meet specified needs.
4. Function effectively in teams.
5. Identify, formulate, and solve problems in computer engineering technology.
6. Understand their professional and ethical responsibilities.
7. Communicate effectively.

**Admission to Major** is granted by the department.

Minimum program admission requirements are:

- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

Students who do not have the required background for MATH 115 may have to take additional preparatory coursework as well. Consult with your major adviser to plan your general education and major requirements.

All students must complete a minimum of 12 semester credits of mathematics starting with Precalculus math and a minimum of 24 semester credits of mathematics and science courses.

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### COMPUTER ENGINEERING TECHNOLOGY BS

It is strongly recommended that all CET students enroll in EET 101 Introduction to EET/CET in their freshman year.

**Required for Major (Communication, Mathematics and Science, 36 credits):**

ENG	101	Composition (4)
ENG	271	Technical Communication (4)
MATH	115	Precalculus Mathematics (4)
MATH	121	Calculus I (4)
MATH	127	Calculus II for Engineering Technology: Integration (2)
MATH	180	Math for Computer Science (4)

## Computer Engineering Technology

PHYS	211	Principles of Physics I (4)
PHYS	212	Principles of Physics II (4)
SPEE	102	Public Speaking (3)
Choose one of the following:		
STAT	154	Elementary Statistics (3)
MATH	354	Concepts of Probability and Statistics (3)
CHEM	105	Introduction to Chemistry (3)

### Required for Major (COMS, 20 credits):

COMS	110	Introduction to Computer Science (4)
COMS	111	Fundamentals of Computer Science I (4)
COMS	112	Fundamentals of Computer Science II (4)
COMS	280	Systems Analysis and Design (4)
COMS	340	Database Systems Management I (4)

### Required for Major (EET, 46 credits):

EET	113	DC Circuits (3)
EET	114	AC Circuits (3)
EET	221	Electronic CAD (3)
EET	222	Electronics I (4)
EET	223	Electronics II (4)
EET	225	Digital Principles (3)
EET	241	Electronic Shop Practices (2)
EET	400	Network Analysis (3)
EET	454	Microprocessors I (4)
EET	456	Communications I (4)
EET	480	Automatic Controls (3)
EET	484	Microprocessors II (4)
EET	488	Senior Project Design I (1)
EET	489	Senior Project Design II (2)
EET	497*	Internship (3)

\* You may substitute one EET advanced elective for internship. Permission required.

### Required Minor: None.

### NETWORKING OPTION

#### Required for Option (Communication, Mathematics, and Science, 36 credits):

CHEM	105	Introduction to Chemistry (3)
ENG	101	Composition (4)
ENG	271	Technical Communication (4)
MATH	115	Precalculus Mathematics (4)
MATH	121	Calculus I (4)
MATH	127	Calculus II for Engineering Technology: Integration (2)
MATH	180	Math for Computer Science (4)
PHYS	211	Principles of Physics I (4)
PHYS	212	Principles of Physics II (4)
SPEE	102	Public Speaking (3)

### Required for Option (COMS, 22 credits):

COMS	110	Introduction to Computer Science (4)
COMS	111	Fundamentals of Computer Science I (4)
COMS	112	Fundamentals of Computer Science II (4)
COMS	171	Introduction to C++ Programming (2)
COMS	280	Systems Analysis and Design (4)
COMS	340	Database Systems Management I (4)

### Required for Option (EET, 48 credits):

EET	113	D C Circuits (3)
EET	114	A C Circuits (3)

EET	221	Electronic CAD (3)
EET	222	Electronics I (4)
EET	225	Digital Principles (3)
EET	230	Microcomputer Technology (4)
EET	241	Electronic Shop Practices (2)
EET	430	Computer Networking I (4)
EET	431	Computer Networking II (4)
EET	454	Microprocessors I (4)
EET	456	Communications I (4)
EET	484	Microprocessors II (4)
EET	488	Senior Project Design I (1)
EET	489	Senior Project Design II (2)
EET	497*	Internship (3)

\* You may substitute one EET advanced elective for internship. Permission required.

### Required Minor: None

## POLICIES/INFORMATION

**GPA Policy.** Students graduating with a degree in Computer Engineering Technology must have (1) completed a minimum of 20 semester credit hours of upper division EET and COMS at MSU, (2) have a cumulative GPA of 2.0 or better on all upper division EET and COMS courses, and (3) have completed their senior design sequence at MSU.

**P/N Grading Policy.** A student who majors in CET must elect the grade option for all required courses including general education courses listed by number even if offered by another department.

If the credits earned for composition, technical writing and speech courses equal less than 9 credits, either an advanced speech course or a course in English language literature must be selected as a general elective.

Transfer of credit to the CET major is subject to policies described in this bulletin for all students transferring to MSU and to the following department policies:

1. All transfer students must take EET 221 if not proficient with current MSU software.
2. For courses taken at technical colleges/vocational technical schools and pertinent courses taken in the military the student may receive up to 8 credits upon review of course materials, grades and written approval by the program coordinator. These credits may be used for EET 112, 113, and 114. The student may also attempt to test out of EET 114, 222, 223 and 225.
3. For courses taken at community colleges and four-year colleges, up to 25 credits may be accepted if the transcript is from an ABET-accredited program. If the program is not accredited by ABET, up to 20 credits may be accepted. Grades of transfer credits must be C or better to be acceptable for substitution for required courses.

Testing for course credit will be available via prior application made with the program coordinator. Students may not apply for credit by examination for an EET course in which they were previously enrolled at MSU or for any EET course above EET 225.

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## Computer Engineering Technology

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### COURSE DESCRIPTIONS

#### **Electronic Engineering Technology:**

##### **101 (1) Introduction to EET/CET**

Information and hands-on experiences regarding EET/CET courses and careers, creative problem solving, reverse engineering, group projects, introduction to EET/CET laboratories, computers and software, speakers from industry, and technical communications. One hour lecture and one hour lab per week. F

##### **113 (3) DC Circuits**

A study of DC electrical circuits, Kirchhoff's laws, series and parallel circuits, inductors, capacitors, Thevenin's equivalent circuit theorem, and other network analysis theorems.

Pre: MATH 115, or concurrent F, S

##### **114 (3) AC Circuits**

A study of AC circuits, power, phasors, series and parallel AC networks, and network analysis theorems.

Pre: EET 113 and MATH 115 F, S

##### **221 (3) Electronic CAD**

Drafting Principles involving use of computer electronic CAD software in laying out block diagrams, schematic diagrams, production drawings, graphical presentation data, and printed circuit board layout and construction. F

##### **222 (4) Electronics I**

An introduction to semiconductor theory and circuits; includes characteristics curves, biasing techniques and small signal analysis of FETs and MOSFETs, feedback concept, BJT and FETs frequency response.

Pre: EET 114 or concurrent F

##### **223 (4) Electronics II**

Differential amplifier, linear and nonlinear operational amplifier, power amplifier, linear digital ICs, oscillators, power supplies, D/A, A/D conversion, four layered devices and their applications.

Pre: EET 222 S

##### **225 (3) Digital Principles**

A study of number systems, Boolean algebra, switching function minimization techniques, binary arithmetic, small scale and medium scale logic chips, programmable logic devices, latches, flip-flops, registers and counters, and sequential circuit design. S

##### **230 (4) Microcomputer Technology**

An introduction to the installation, configuration, upgrading, troubleshooting, and repair of microcomputers. Basic knowledge of desktop systems, basic networking concepts and printers will be introduced. Safety and common preventive maintenance procedures will be covered.

Pre: EET 113 S

##### **241 (2) Electronic Shop Practices**

An introduction to tools, equipment, materials, and techniques used in fabrication of electronic projects and printed circuit boards.

Pre: EET 222 and 221 S

##### **393 (1-4) Practicum**

Elective credit for approved experience in off-campus work related to CET major. Permission required. F, S

##### **400 (3) Network Analysis**

A course in network analysis that stresses time, frequency and Laplace transform domain techniques.

Pre: EET 114 and MATH 127 S

##### **425 (3) Advanced Digital Design**

A study of multiple-output switching functions optimization, flip-flops, registers and counters, programmable logic devices, synchronous sequential circuit design and synthesis, pulse mode and fundamental model sequential circuit design, test methods, and test vector generation.

Pre: EET 225 S

##### **430 (4) Computer Networking I**

An introduction to the basic foundations of computer networking. The course will encompass telecommunications, local area networks, and wireless communication. Topics covered include the OSI model, the TCP/IP model, different network topologies and associated hardware, error detection and correction, protocols and security.

Pre: EET 230 and COMS 112 F

##### **431 (4) Computer Networking II**

A continuation of EET 430. Router configurations, advanced LAN topologies, network configurations, protocols, and switching designs. Network troubleshooting and threaded case studies.

Pre: EET 430 S

##### **454 (4) Microprocessors I**

A study of microcomputer hardware and software fundamentals, the instruction set and the addressing modes of a microprocessor/microcontroller, assembly programming, basic I/O concepts, parallel I/O methods, asynchronous serial I/O method, synchronous serial I/O methods, A/O conversion, timer applications, etc.

Pre: EET 225 S

##### **456 (4) Communications I**

Communications principles & systems, practical engineering aspects involved in modulation demodulation, receivers, transmitters & filters. Also included are radiation and antennas, guided waves, microwaves, and microwave systems.

Pre: EET 223 S

##### **480 (3) Automatic Controls**

Servomechanism analysis under transient and steady state conditions. Negative and positive feedback. Laplace transform analysis of feedback systems. Frequency response. System stability analysis using Bode plots and Root locus. Lead and velocity compensation. Analog computers. Microprocessor control and the analog/digital interface.

Pre: EET 400 F

##### **484 (4) Microprocessors II**

A study of a high performance microprocessor architecture, bus cycles, memory system design, DMA controller, hard disk drive, system bus, PC architecture and subsystems, PC programming assembly and C++.

Pre: EET 454 F

## Corrections

### 486 (3) Communications II

State-of-the-art in communication technology, RF/microwaves, transmission lines, applications, Mobile communications, cellular communications, satellite communications, optical fiber communications.  
Pre: EET 456 F

### 488 (1) Senior Project Design I

An individual design project performed in consultation with the instructor. Phase I includes the acceptance of the proposal, defining, and limiting the project objectives, initial source contacts and procurement of materials.  
Pre: EET 241, four 400-level EET courses F, S

### 489 (2) Senior Project Design II

Phase II includes completion of the project with evidence of extensive laboratory performance. A final oral report to the class and a standard formal written report are required.  
Pre: EET 488 F, S

### 497 (1-6) Internship

Should be taken at end of junior year. Permission required.  
Pre: 40 hrs EET credit F, S

### 499 (1-4) Individual Study

F, S

### Computer and Information Science:

#### 110 (4) Introduction to Computer Science

Provides a comprehensive introduction to the algorithmic foundations of computer science, computer hardware, computer software, computer applications, and social issues. Lab work develops familiarity with a variety of software and hardware. Intended to provide knowledge and skills applicable to all disciplines while providing specialized preparation for further study in Computer & Information Sciences. F, S

#### 111 (4) Fundamentals of Computer Science I

The first course in a two-course sequence for students who are planning to major or minor in computer science. Emphasizes concepts that provide a basic background for continuing study in computer science. High-level language programming, use of abstraction in program design.  
Pre: MATH 112 and COMS 110, or equivalent F, S

#### 112 (4) Fundamentals of Computer Science II

A continuation of 102. Introduction to object-oriented programming techniques and essential data structures such as stacks and queues.  
Pre: COMS 111 F, S

#### 171 (2) Introduction to C++ Programming

This course provides an introduction to programming using C++. Emphasis on structured programming concepts, with a brief discussion of object-oriented programming. Control structures, expressions, input/output, arrays, and functions. F, S

#### 280 (4) Systems Analysis and Design

This course explores both structured as well as object-oriented systems analysis and design. Use of upper and lower CASE tools are employed in the analysis, design, and implementation of a team oriented term project.  
Pre: COMS 111 F, S

### 340 (4) Database Management Systems I

Introduction to the concept of database systems; database models; database management systems; file organization; design of databases using data modeling and normalization; conversion of data model into relational, network, and hierarchical data models; extensive coverage of SQL and implementation of an application using a relational database in a team environment.  
Pre: COMS 280 F, S

## Corporate & Community Fitness/Wellness

*College of Allied Health & Nursing  
Department of Human Performance  
Chair: Harry Krampf  
1400 Highland Center • 507-389-6313*

Coordinator: Mary Visser

This minor is designed to prepare individuals for a corporate or community-based position requiring basic exercise programming and personal training skills.

### CORPORATE & COMMUNITY FITNESS MINOR

#### Required General Education (4 credits)

HP 175 Fitness Activity (1)  
HLTH 210 First Aid and CPR (3)

#### Required Support Courses (8 credits)

BIOL 220 Human Anatomy (4)  
BIOL 230 Human Physiology (4)

#### Required for Minor (Core, 17-24 credits)

HP 348 Structural Kinesiology and Biomechanics (3)  
HP 414 Physiology of Exercise (3)  
HP 436 Nutrition in Exercise and Sport (2)  
HP 465 Legal Aspects of Physical Education and Sport (3)  
HP 466 Graded Exercise Testing and Exercise Prescription (3)  
HP 492 Internship: Corporate and Community Fitness (3-10)

### POLICIES/INFORMATION

**GPA Policy.** Maintain an overall minimum GPA of 2.00.

**P/N Grading Policy.** Courses required must be taken for a grade. Except for the Internship (492/692) which is graded P/N.

## Corrections

*College of Social & Behavioral Sciences  
Department of Sociology & Corrections  
113 Armstrong Hall • 507-389-1561  
Web site: [www.mnsu.edu/dept/soccor/web/sc.html](http://www.mnsu.edu/dept/soccor/web/sc.html)*

Chair: William Wagner

Barbara Carson, Joe W. Davis, Kristine Empie, Kim Greer, James Robertson, Pedro Thomas, William Wagner

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## Corrections

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The Corrections major is designed to prepare students for entry level professional work in corrections. The major is built upon a foundation of general education, sociological concepts, and a commitment to understanding and transforming correctional practice. The major achieves its objectives through the melding of academic learning with experiential education. This program is further expected to promote, within corrections and to the community at large, a commitment to the principles of social justice, respect, tolerance, dignity and worth of all persons.

**Admission to Major.** Students enrolling in 300-400 level courses must be admitted to the program. Admission is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.00 (C).

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### CORRECTIONS BS

**Required General Education (6 credits):**

SOC	101	Introduction to Sociology (3)
CORR	106	Introduction to Criminal Justice Systems (3)

**Required for Major (Core, 33 credits):**

CORR	255	Juvenile Delinquency (3)
CORR	300	Foundations and Orientation to Corrections (3)
CORR	442	Criminology (3)
CORR	443	Penology (3)
CORR	447	Community Corrections (3)
CORR	448	Correctional Law (3)
CORR	449	Correctional Counseling (3)
CORR	496	Field Practice in Corrections (10)
CORR	497	Capstone Seminar (2)

**Required Electives (15 credits):**

Choose six credits from the following:

SOC	409	Family Violence (3)
CORR	441	Social Deviance (3)
CORR	451	Law and Justice in Society (3)
CORR	452	Victimology (3)
CORR	453	Treatment Methods in Corrections (3)
CORR	459	Issues in Corrections (3)
CORR	465	Law and Chemical Dependency (3)

Choose one course from Social and Behavioral:

SOC	351	Social Psychology (3)
SOC	486	Modifying Behavior in Social Settings (3)

Choose one course from Methods of Research:

SOC	201	Social Research I (3)
SOC	469	Survey Research (3)
SOC	479	Sociological Ethnography (3)
SOC	480	Social Observation (3)

Choose one course from Inequality, Race, Gender and Ethnicity:

SOC	463	Social Stratification (3)
SOC	446	Race, Culture and Ethnicity (3)
SOC	485	Selected Topics: <ul style="list-style-type: none"><li>- Women, Crime, and Social Control (3)</li><li>- Race, Crime, and Justice (3)</li><li>- Violence in the Workplace (3)</li></ul>

or other approved diversity course

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**Required Minor. Yes.**

### CORRECTIONS MINOR

**Required for Minor (Core, 9 credits):**

CORR	106	Introduction to Criminal Justice Systems (3)
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Choose at least two courses from the following:

CORR	255	Juvenile Delinquency (3)
CORR	441	Social Deviance (3)
CORR	442	Criminology (3)

**Required Electives for Minor (12 credits):**

CORR	300-400 Level
CORR	300-400 Level
CORR	300-400 Level
CORR	300-400 Level

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### POLICIES/INFORMATION

**GPA Policy.** A minimum grade-point average of 2.0 is required for all coursework in the major. A minimum cumulative grade-point average of 2.5 for courses taken in the major to be eligible for field practice or internship.

**P/N Grading Policy.** Courses leading to a major or minor in Corrections may not be taken on a P/N basis, except where P/N grading is mandatory.

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### COURSE DESCRIPTIONS

**106 (3) Introduction To Criminal Justice Systems**

Examines the making of criminal law, the evolution of policing, the adjudication of persons accused of criminal law violations, and the punishment of adult offenders. F, S

**132 (3) Crime and Punishment**

An interdisciplinary course which explores crime and punishment utilizing and developing critical thinking skills. Emphasis is placed on the process of developing and critiquing one's own hypotheses as they relate to crime and punishment. F

**250 (3) Social Justice in School and Community**

Analyzing justice as it relates to (1) education, and (2) the criminal justice system. Emphasis is on comparing Retributive Systems with the "newer" Restorative Justice. Active learning methods in the classroom, schools and communities, including Service-Learning. V

**255 (3) Juvenile Delinquency**

A critical consideration of definitions of juvenile delinquency, emphasis on micro and macro level of struggle in which delinquent behavior takes place, critique of current theories on delinquency, and the juvenile justice response to delinquency. F, S

**291 (1-3) Exploratory Studies**

May be used to explore areas of interest not covered in regular courses. A maximum of three hours applicable toward a major or minor in the department with consent of an advisor. Pre: Consent F, S

**300 (3) Foundations and Orientation To Corrections**

To introduce majors to academic concepts and policy is-



## Dance

sues in Corrections. Begin student portfolios to connect learning across classes. Participate in service-learning experiences working with clients in corrections.

Pre: CORR 106 and SOC 101 F, S

### 417 (3) Program Administration

Implications of Sociological Knowledge for the administration of Human Services programs. Theoretical and practical aspects of administration with the Social Service systems.

Pre: SOC 101 S

### 441 (3) Social Deviance

Sociological perspective on social deviance; overview of theoretical approaches; emphasis on symbolic interactionism; issues of social control; research examples and policy implications.

Pre: SOC 101 F, S

### 442 (3) Criminology

A critical consideration of myths concerning crime, perspectives on crime and their assumptions, current criminology theory, and construction of alternative explanations related to crime.

Pre: SOC 101 F, S

### 443 (3) Penology

Addresses the justifications and the historical development of punishment, the legal and policy issues concerning capital punishment, and the use of incarceration as a response to crime.

Pre: CORR 106 and 300 F, S

### 447 (3) Community Corrections

Philosophy, historical developments, and theoretical basis of probation, parole, and other community corrections programs. Evaluation of traditional and innovative programs in Community Corrections.

Pre: SOC 101 and CORR 106 F, S

### 448 (3) Correctional Law

Examines the rights of inmates, probationers, and parolees.

Pre: CORR 106 and 300 F, S

### 449 (3) Correctional Counseling

Principles and methods of individual and group counseling with juvenile and adult offenders; development of interpersonal helping skills.

F, S

### 451 (3) Law and Justice In Society

A critical look at the construction of the concepts of law and justice as it operates in the United States and an application of the principles of justice to community issues.

Pre: SOC 101 and CORR 106 S

### 452 (3) Victimology

Historical overview of characteristics of victims, victim-offender relationships, societal victimization, victim's rights and services, and restorative justice.

Pre: SOC 101 and CORR 106 F

### 453 (3) Treatment Methods In Corrections

Examination of major correctional treatment models, e.g., individual and group counseling approaches, behavior modi-

fications, reality therapy and transactional analysis. Considerations in planning, implementation and evaluating juvenile and adult treatment programs. Critical evaluation of research on the effectiveness of various treatment methods.

Pre: CORR 449 S

### 459 (3) Issues In Corrections

A critical examination of current issues in the correctional field.

S

### 465 (3) Law and Chemical Dependency

Addresses aspects of criminal and civil law pertinent to substance abuse.

F

### 485 (2-6) Topics: Selected Topics

Topics vary as announced in class schedule. May be retaken for credit if topic varies.

Pre: SOC 101 V

### 491 (1-6) In-Service

Topics vary as arranged by students and instructor. May be retaken for credit.

V

### 492 (1) Honors Reading

For Honors students only.

V

### 496 (10) Field Practice In Corrections

Full time experience in a corrections agency with an emphasis on the development of skills. For Corrections majors only. Required for major. Formal application required.

Pre: Consent F, S

### 497 (2) Capstone Seminar

Capstone is an evaluative course which allows students to document their learning and provide an assessment of their personal learning and the effectiveness of the Corrections Program. To be taken concurrently with CORR 496.

Pre: Completion of all other required CORR courses F, S

### 498 (3-6) Internship In Corrections

The internship in Corrections is designed to provide opportunities to apply classroom learning, to practice and enhance skills, to experience professional socialization, and to explore a career. It also serves as a vehicle for the student to become more aware of personal strengths and to identify areas in which further growth is needed.

Pre: Consent F, S

### 499 (1-6) Individual Study

A maximum of six credits is applicable toward a single major in the department; three credits toward a minor.

Pre: Consent

## Dance

*College of Arts & Humanities*

*Department of Theatre and Dance*

201 Performing Arts Center • 507-389-2118

Fax: 507-389-2922

Web site: [www.msutheatre.com](http://www.msutheatre.com)

Coordinator: Julie Kerr-Berry

The minor in dance emphasizes the importance of the

## Dance

artist as both performer and educator through diverse technical and theoretical dance preparation. In their program of study, students are required to participate in a variety of dance forms, namely, modern dance, ballet, jazz, Afro-Caribbean and tap. They also choose from a variety of other coursework which includes: world dance, creative dance and dramatics, pedagogy, and composition. At the culmination of all coursework, seniors are required to complete a senior project or dance practicum. Through an audition, students may be selected to participate in performance and choreographic opportunities as a member of the University Repertory Dance Theatre or perform in mainstage musical theatre productions.

### DANCE MINOR

#### Required for Minor (Core, 15 credits):

THEA	123	Beginning Jazz Dance (1)
THEA	125	Afro-Caribbean Dance Forms (1)
THEA	126	Beginning Ballet (1)
THEA	127	Beginning Tap Dance (1)
THEA	128	Beginning Modern Dance (1)
THEA	223	Intermediate Jazz Dance (2)
THEA	226	Intermediate Ballet (2)
THEA	227	Intermediate Tap Dance (2)
THEA	228	Intermediate Modern Dance (2)
THEA	328	Advanced Modern Dance/Company Class (2)

Choose ONE of the following tracks:

#### Performance Studies (6 credits):

THEA	225	World Dance in Cultural Perspectives (3)
THEA	321	Dance Composition and Improvisation (2)
THEA	429	Senior Dance Project (1)

#### Teaching Track (6 credits):

THEA	324	Methods and Materials for Teaching Creative Dance and Dramatics (2)
THEA	329	Dance Practicum (1)
THEA	424	Dance and Theatre Pedagogy (3)

### POLICIES/INFORMATION

**GPA Policy.** A grade of C or better must be earned for minor credit.

**P/N Grading Policy.** Required courses must be taken for a grade.

### COURSE DESCRIPTIONS

Descriptions and offerings of dance courses are also listed under the THEATRE AND DANCE section. For other electives see appropriate departments.

#### 123 (1) Beginning Jazz Dance

Fundamentals of beginning jazz dance technique. S

#### 125 (1) Afro-Caribbean Dance

Fundamentals of African-based dance forms explored through West African and Caribbean roots. ALT-F

#### 126 (1) Beginning Ballet

Fundamentals of beginning ballet technique. F

#### 127 (1) Beginning Tap Dance

Fundamentals of tap dance technique utilized in musical theatre. S

#### 128 (1) Beginning Modern Dance

Fundamentals of beginning modern dance technique and improvisation. F

#### 223 (2) Intermediate Jazz Dance

Expanding jazz dance technique moving into musical theatre dance combinations.

Pre: THEA 123 or consent F

#### 225 (3) World Dance in Cultural Perspectives

Cross-cultural survey of dance with emphasis on historical, social and cultural dimensions.

Pre: THEA 125, 126, or 128 ALT-F

#### 226 (2) Intermediate Ballet

Expanding ballet technique with emphasis on longer and more complex adagio, petite allegro, and grand allegro sections.

Pre: THEA 126 or consent S

#### 227 (2) Intermediate Tap Dance

Expanding tap dance technique including advanced combinations utilized in musical theatre.

Pre: THEA 127 or consent F

#### 228 (2) Intermediate Modern Dance

Expanding modern dance technique with emphasis on center floor combinations and longer, more complex traveling combinations.

Pre: THEA 128 or consent S

#### 321 (2) Dance Composition and Improvisation

The study of dance making, dance accompaniment, and dance criticism through the creation of dance works.

Pre: THEA 125, 126, 228 ALT-S

#### 324 (2) Methods and Materials for Teaching Creative Dance and Dramatics

Exploration of teaching creative dance and dramatics in the K-12 setting.

Pre: THEA 121, 122, 128 ALT-F

#### 328 (2) Advanced Modern Dance/Company Class

Advanced modern dance technique with emphasis on performance skills, elevation, and turns.

Pre: THEA 228 or consent F, S

#### 329 (1) Dance Practicum

Individualized teaching and/or choreographic experiences in the private or public sector.

Pre: Consent F, S

#### 424 (3) Dance and Theatre Pedagogy

Pedagogy of dance theatre in the K-12 setting. Emphasis will include: national and state standards, assessment practices, lesson planning and curriculum development. Taking in conjunction with KSP 420, this course will include pre-service teaching experience.

Pre: THEA 324 ALT-S

#### 429 (1) Senior Dance Project

This course represents a culminating experience for all

## Dental Hygiene

dance minors. Individually paced and directed, this project can take either choreographic or written (academic) form. Periodic meetings will occur between student and instructor to assess progress.

Pre: Completion of all dance minor requirements  
F, S

### Dental Hygiene

*College of Allied Health & Nursing*

*Department of Dental Hygiene*

3 Morris Hall • 507-389-1313

Dental Clinic • 507-389-2147

Web site: [www.cahn.mnsu.edu/dentalhygiene/](http://www.cahn.mnsu.edu/dentalhygiene/)

hygienehomepage.html

Chair: Lynnette Engeswick

Terri Brown, Lynnette Engeswick, Lisa Fleck, Nancy Geistfeld, Angela Monson

The dental hygiene curriculum is designed to provide opportunities for the student to develop a sound clinical and theoretical foundation for the practice of dental hygiene. The graduate is prepared to fulfill the dental hygiene roles as clinician, change agent, educator, researcher and consumer advocate as put forth by the American Dental Hygienists' Association.

The program is designed to meet the American Dental Association's Commission on Dental Accreditation Standards for Dental Hygiene, and offers a Bachelor of Science degree upon completion.

**Admission to Major.** Application for admission to the Dental Hygiene program is a separate process in addition to being admitted to the University. Requirements for application for admission to the dental hygiene major are:

- 1) completion of at least 36 semester credits.
- 2) a minimum career grade-point average of 2.5.
- 3) successful completion of prerequisites of SPEE 100 or 102, ENG 101, PSYC 101, SOC 100 or 101, BIOL 220, and two of these three courses: BIOL 270, BIOL 230, or CHEM 111.
- 4) successful completion of Category 4: Mathematical/Logical Reasoning from the General Education Program.

The application form may be obtained from the Dental Hygiene Department secretary or a Dental Hygiene faculty member. The number of students admitted to the Dental Hygiene major is limited to 24 students admitted each fall semester. Applications are accepted primarily based on their academic achievement in prerequisite courses with an emphasis placed on the science courses.

#### DENTAL HYGIENE BS

**Required General Education (32 credits):**

ENG	101	Composition (4)#
SPEE	100	Fundamentals of Speech Communications (3)# <b>or</b>
SPEE	102	Public Speaking (3)#

CHEM	111	Chemistry of Life Processes (5)^
BIOL	270	Microbiology (4)^
PSYC	101	Psychology (4)#
SOC	100	Social Problems (3)# <b>or</b>
SOC	101	Introduction to Sociology (3)#
HLTH	101	Health and the Environment (3) ~
REHB	110	Sensitivity to Disability (3)
PHIL	222	Medical Ethics (3) <b>or</b>
PHIL	120	Introduction to Ethics (3)

**Recommended for Major (4 credits):**

COMS	100	Intro to Computer Science (4)
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**Required for Support Courses (23 credits):**

BIOL	220	Human Anatomy (4) #
BIOL	230	Human Physiology (4) ^
FCS	240	Nutrition I (3) ~
HLTH	455	Health and Aging (3) <b>or</b>
BIOL	417	Biology of Aging and Chronic Diseases (3)
HLTH	475	Biostatistics (3)
HLTH	321	Medical Terminology (3)
HLTH	361	Health Communications (3)

#Prerequisites must be successfully completed before applying.

^Two of these three courses must be successfully completed prior to submitting an application to the Dental Hygiene Program. The third course must be successfully completed prior to enrolling in dental hygiene courses.

~ Must be successfully completed prior to enrolling in dental hygiene courses.

**Dental Hygiene Core (53 credits):**

DHYG 311	DHYG 313	DHYG 319
DHYG 321	DHYG 325	DHYG 326
DHYG 327	DHYG 328	DHYG 329
DHYG 331	DHYG 332	DHYG 333
DHYG 421	DHYG 422	DHYG 423
DHYG 425	DHYG 427	DHYG 431
DHYG 432	DHYG 433	DHYG 435
DHYG 437		

**Required Electives:**

Electives to yield a total of 128 semester credits are required.

#### POLICIES/INFORMATION

**P/N Grading Policy.** All courses required for Dental Hygiene must be taken for a letter grade and a letter grade of C or higher must be achieved. A grade of D or F in a Dental Hygiene course will result in academic suspension from the program. Completion of course numbers 326 forward requires successful completion of previous Dental Hygiene courses obtaining a "C" or better in order to continue in the Dental Hygiene program.

**Costs.** A student in the dental hygiene program should be prepared to spend about \$300 each semester for books and supplies. An additional \$2,200+ will be spent for instru-

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## Dental Hygiene

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ments, gloves, uniforms, etc. Approximately 50 percent is paid before beginning the program. Upon acceptance to the program a deposit of \$100.00 is required. The remainder is due in July of the same year.

Dental hygienists are at risk for exposure to blood borne pathogens (BBP). Accepted students will be required to be vaccinated against hepatitis B and will also be required to have their blood tested following any exposures to BBP through needle sticks, cuts or splashes that occur at the MSU Dental Clinic or any off-site clinical sites. Currently the vaccine series costs approximately \$150. Students must successfully complete a CPR course prior to enrolling fall semester.

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### COURSE DESCRIPTIONS

#### 311 (3) Preclinical Orientation

This course includes an introduction to dental terminology and clinical aspects of dental hygiene treatment including care and use of equipment/instruments, infection control and preparation of patient records.

Pre: Admission into Dental Hygiene and Dental Terminology packet F

#### 313 (3) Clinical Skill Development

This course will teach the operative techniques needed to perform oral prophylactic procedures and health education through laboratory/clinical practice.

Pre: Admission into Dental Hygiene F

#### 319 (2) Head and Neck Anatomy

Head and Neck Anatomy is the study of the hard and soft tissues of the head and neck including bones, muscles, nerves, blood supply, and glands, and how they function.

Pre: Admission into Dental Hygiene F

#### 321 (3) Radiography

This course includes production of dental radiographs, physics of x-radiation, biologic effects, interpretation, processing, mounting, and laboratory practice on mannequins and patients. Special attention is given to infection control, safety precautions, and patient selection.

Pre: Admission into Dental Hygiene F

#### 325 (2) Dental Anatomy

This course includes the study of the permanent, mixed and deciduous dentitions including each individual tooth's morphology, function and occlusion.

Pre: Admission into Dental Hygiene F

#### 326 (4) Dental Materials

Dental materials is the study of the fundamental elements, purposes and uses of the materials used in the modern dental office. S

#### 327 (2) Periodontology I

This course will include a study of supporting tooth structures, identification, classification, etiology, progression and treatment of periodontal diseases. S

#### 328 (1) Radiography Practicum

This course provides practical experience in the production of radiographs on patients in the clinical setting. This course also includes interpretation of radiographs. S

#### 329 (4) Oral Histology, Oral Embryology, Oral Pathology

Oral Histology and Embryology deals with the development of the face and the hard and soft tissues of the oral cavity. Oral Pathology deals with the causes and mechanisms of disease with special emphasis on common oral lesions and neoplasms stressing their etiology and clinical manifestations. S

#### 331 (2) Clinical Dental Hygiene I

This course provides an opportunity for dental hygiene students to develop their roles as educators, clinicians, consumer advocates, change agents, researchers, and administrators in a clinical setting. S

#### 332 (2) Clinical Seminar I

This course includes the study of treatment planning, oral health education, ultrasonic scalers, cardiology, sealants, and new products. Library use and writing a research paper are also included. S

#### 333 (2) Clinical Dental Hygiene IS

This course offers the student continued practice of dental hygiene treatment procedures in the MSU Dental Clinic. S

#### 421 (3) Clinical Dental Hygiene II

This course offers the student continued practice of dental hygiene treatment procedures in the MSU Dental Clinic. It includes several mandatory off-campus experiences. F

#### 422 (2) Clinical Seminar II

This course focuses on clinical procedures, educational techniques and legal and ethical issues as they apply to the patient-dental hygiene provider relationship. F

#### 423 (3) Pharmacology

Pharmacology is the study of drugs used in dentistry or medicine for the treatment, prevention and diagnosis of disease. F

#### 425 (3) Community Dental Health

This course introduces second year dental hygiene students to the disciplines and basic principles of community dental health, epidemiologic methods and biostatistical measurement analysis. Preventive oral health measures and program development is included to provide a background for the practical application of dental public health methods to the community. F

#### 427 (2) Periodontology II

Didactic and clinical study of etiology, diagnosis, preventive and therapeutic procedures involved with periodontal disease. F

#### 431 (3) Clinical Dental Hygiene III

This course offers the student continued practice of dental hygiene treatment procedures in the MSU Dental Clinic. It includes several mandatory off-campus experiences. S

#### 432 (2) Clinical Seminar III

This course focuses on the development of a personal sense

## Early Childhood Education

of responsibility for the well-being and development of one's workplace from an employee perspective. S

### 433 (2) Pain Control

Pain control deals with methods of alleviating or controlling pain and discomfort during dental and dental hygiene services, focusing on local anesthesia and nitrous oxide sedation. S

### 435 (2) Community Practicum

This course focuses on the role of dental hygiene practitioners in promoting optimal oral health at the individual level and in the community. S

### 437 (1) Medically Compromised/Special Needs Patients

This course addresses the care of patients with major disabling conditions. S

### 499 (1-6) Individual Study

## Developmental/Adapted Physical Education

*College of Allied Health & Nursing*  
*Department of Human Performance*  
1400 Highland Center • 507-389-6313

Chair: Harry Krampf

Sherry Folsom-Meek

### DEVELOPMENTAL/ADAPTED PHYSICAL EDUCATION, TEACHING MINOR

Admission to Minor is granted by the department concurrent with or following admission to physical education major. Minimum department admissions requirements are:

- a minimum of 32 earned semester credit hours
- a minimum cumulative GPA of 2.00 (C).

#### Required for Minor (Core, 19 credits):

- |    |     |  |
|----|-----|--|
| HP | 411 | Developmental Adapted Physical Education (3)                               |
| HP | 412 | Assessment in Adapted PE (2)   |
| HP | 413 | Lifespan Motor Development (2)   |
| HP | 421 | Teaching Sport to Individuals with Disabilities (2)                        |
| HP | 422 | Teaching Adapted Aquatics (2)  |
| HP | 445 | Physical Education for Students with Mental and Emotional Disabilities (3) |
| HP | 471 | Consulting Techniques in Developmental/Adapted Physical Education (3)      |
| HP | 493 | Internship in Developmental/Adapted Physical Education (2)                 |

#### Required Support Courses for Minor (Special Education, 3 credits):

- |      |     |  |
|------|-----|--|
| ESSP | 405 | Individuals with Exceptional Needs (3) |
|------|-----|--|

Policies/Information

All courses in minor must be taken for grade with the exception of HP 493 Internship in D/APE) which may be taken concurrently with student teaching. Cooperating Teacher for HP 493 must be a licensed D/APE teacher.

## Early Childhood Education

*College of Education*

*Department of Educational Studies: Elementary and Early Childhood*

328 Armstrong Hall • 507-389-1516

Advisor: Peg Ballard

Ronald Browne, Terry Fogg, Linda Good, Marla Mastin, Karl Matz, Mary Ellen Pearson, Steve Reuter, Sandra Jessen (Children's House)

The Department of Educational Studies: Elementary and Early Childhood has a major responsibility for providing professional education for early childhood and elementary teachers. The general goals of this program are to develop the dispositions, knowledge, and skills of candidates for licensure; to make available pre-professional clinical experiences in order to introduce students to the total school context; to provide the direct experience of classroom teaching under supervision; and to develop understanding of curriculum design in its theory and process of formulation. Emphasis shall be on the acquiring of knowledge, professional skills and learning environment awareness.

**Advising.** The College of Education serves Early Childhood Education students through developmentally appropriate levels of advising. Several small group advising sessions by level are offered each semester. Sessions are posted and announced in the *Reporter*, the Department Office, and Advising Office (117 Armstrong Hall).

**Level 100/First Year Students:** All students are assigned to the Student Relations Coordinator (SRC) during their first year. The SRC initially conducts the orientation programs and approves the first semester schedule. Students during the first year then also have an identifiable location for immediate advising assistance (COE Academic Advising Office, directed by the SRC). Sessions focus on program expectations, general education, and an early clinical experience.

**Level 200/Second Year Students:** Students are admitted to the major and assigned an advisor in their program. Sessions focus on program expectations, prerequisite completion, second year service learning and diversity of clinical experiences and professional education admission.

**Level 300/Plan of Study:** Sessions focus on program expectations and sequential program blocking.

**Level 400/Plan of Study Completion:** Students are eligible for level 400 sessions when a plan of study is complete and application for student teaching and graduation have been made. Sessions focus on program completion, application for graduation deficiencies and licensure application.

**Transfer Student Advising.** Formal evaluation of prior academic preparation follows transfer orientation. The Department Chairperson of Educational Studies: Elementary and Early Childhood formally approves the



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## Early Childhood Education

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coursework based on course descriptions and syllabi, samples of completed work, and/or field experience evaluations.

**Admission to Major, Academic Advising Office (117 Armstrong Hall).** All Early Childhood Education students must be admitted to the major and to Professional Education. All students must submit an unofficial MSU transcript. Transfer students also must submit a copy of their transfer credit evaluation form, which is available from the Campus Access HUB. Early Childhood Education students must complete the following admission requirements:

All Early Childhood Education students must be admitted in the following sequence:

Stage I Admission to the Major.

Stage II Admission to Professional Education.

Stage III Admission to Early Childhood Education Block.

Stage IV Admission to Student Teaching.

### **STAGE I: Admission to the Major**

Coordinator for Admission to Major: Cheryl Kalakian (117 Armstrong Hall).

All students must submit an unofficial or official MSU transcript. Transfer students should submit a copy of their transfer credit evaluation form, which is available from the Campus Access HUB. Elementary Education and Early Childhood students must complete the following requirements to be admitted to the Major:

1. Completion of 40 credits with a grade of A, B, or C.
2. Grade point average (GPA) of 2.5 overall on a 4 point system.
3. A or B in English 101.
4. A or B in Speech 101 or Speech 102.
5. A, B, or C in Math 110 or higher.

Applications are available in 117 Armstrong Hall.

Students who are not admitted may appeal.

### **STAGE II: Admission to Professional Education**

Coordinator for Admission to Professional Education: Cheryl Kalakian (117 Armstrong Hall).

All students working toward the teaching degree in the Early Childhood major must be admitted to Professional Education prior to enrollment in upper division coursework in professional education. Application to Professional Education should be made when the following requirements have been met:

1. Completion of 55 credits.
2. Cumulative GPA of 2.75.
3. Evidence of completion of the Pre-professional Skills Test (PPST).
4. Completion of Faculty Recommendation Folder.
5. Completion of a General Education Intensive Writing (General Education Category 1 C) course with an A or B.
6. Completion of the following courses: EEC 201 and 203, KSP 301, FCS 301 and 303, and PSYC 230.

Application deadline is 10 instructional days prior to upcoming registration. The Department's Admissions Committee will meet soon after the deadlines to determine admission for students.

Students who are not admitted may appeal.

### **STAGE III: Admission to Early Childhood Education Block**

Coordinator for Admission to Early Childhood Education Block: Department Chair (328 Armstrong Hall).

All students working toward the teaching degree in the Early Childhood Education major must be admitted to Block. Application to Block should be made when the following requirements have been met:

1. Grade Point Average (GPA) of 2.75.
2. Completion of all General Education requirements

A handout (Early Childhood: Licensure Plan of Study) with the lists of General Education courses, the Professional Core Support courses, and the Professional Education courses is available in 117 Armstrong Hall.

Application deadline is 10 instructional days prior to upcoming registration. The Department's Admissions Committee will meet soon after the deadlines to determine admission for students.

Students who are not admitted may appeal.

The Early Childhood program reserves the right to consider for admission students who have the potential to be excellent teachers and who have met some but not all the admission requirements.

### **STAGE IV: Admission to Student Teaching.**

Coordinator for Admission to Student Teaching: Director of Clinical and Field Experiences (117 Armstrong Hall).

**Alternative Admission policy.** An alternative admission policy exists to encourage the participation of individuals from under-represented groups. The Student Relations Coordinator has the responsibility of hearing appeals for admission to Professional Education program and may make exception to the published admission criteria.

### **Teacher Licensure Coordinator: Gail Orcutt (118 Armstrong Hall)**

The University recommends licensure to a state upon satisfactory completion of a licensure program. However, licensure does not occur automatically through graduation and the awarding of a diploma. Students need to make application for a Minnesota teaching license at the close of the term in which they graduate. The College of Education, 118 Armstrong Hall, coordinates the licensure process. In addition to meeting all program requirements, the PPST examination of skills in reading, writing, and mathematics needs to be successfully completed, as well as the Praxis II Pedagogy and/or content examination. Minnesota State Law requires that all candidates applying for initial licensure in this state be fingerprinted for national background checks. A conduct review statement will also need to be completed and signed. There are fees for the

## Early Childhood Education

criminal background check and for the issuance of a State of Minnesota teaching license.

### EARLY CHILDHOOD EDUCATION BS, TEACHING

#### Required General Education (44 credits):

This option is available for any major.

ENG	101	Composition (4)
HLTH	310	Drug Education (3)
SPEE	100	Fund. Speech Comm (3) <b>or</b>
SPEE	102	Public Speaking (3)
MATH	110	Perspectives in Math (3) or higher
PSYC	101	Psychology (4)
ECON	201	Principles of Macroeconomics (3) <b>or</b>
POL	111	U.S. Government (3)

#### Required Support Courses (Core, 12 credits):

FCS	301	Child Development (3)*
FCS	303	Working with Families (2)
PSYC	230	Child Care Psychology (3)
EEC	201	Intro to Early Childhood Ed (2)
EEC	203	Intro to Early Children Ed Lab (1)

\*Prerequisites to major course

#### Required Major Courses (50 credits)

##### Professional Education Admission Required

EEC	365	Teaching Infants and Toddlers (3)
EEC	366	Teaching Infants and Toddlers Lab (1)
EEC	368	Preprimary Methods and Materials (3)
EEC	369	Preprimary Methods and Materials Lab (1)
EEC	370	Kindergarten Methods and Materials (2)
EEC	371	Kindergarten Methods and Materials Lab (2)
EEC	435	Teacher-Parent Relations in Education (3)
EEC	440	Primary Grade Literacy (4)
EEC	441	Primary Grade Literacy Lab (1)
EEC	442	Primary Grade Inquiry (4)
EEC	443	Primary Grade Inquiry Lab (1)
KSP	301	Technology (2)
KSP	410	Materials for Young Children (2)
ESSP	304	Young Children with Individual Needs (3)
ESSP	421	Assessment of Young Children with Exceptional Needs (3)
ESSP	440	Teaming with Parents and Other Professionals (3)
HP	413	Early Childhood Motor Development (2)
FCS	400	Culturally Diverse Families (3)
SOWK	415	Child-Family Welfare Services (3)
THEA	324	Methods and Materials for Teaching Dance to Children (2)
MUS	441	Music in Early Childhood (2)

#### STUDENT TEACHING (12 credits)

EEC	466	Pre-Kindergarten Student Teaching and Seminar (6)
EEC	474	Student Teaching Elementary (6)

#### CLINICAL EXPERIENCES

A major component of professional education coursework involves clinical experience in area schools. These experiences are graduated in expectation, time commitment, and skills practice. Multiple methods of assessment are used and evidence collected to provide a view of the clinical

student's skills and abilities. These methods include direct observations of teaching activities by public school and university faculty, the use of videotaped lessons and activities for self-assessment, use of logs, participation in on-line activities, and participation in activities reflective of the professional responsibilities of teachers. The successful completion of each clinical experience is necessary for progression into future clinical activities (e.g., student teaching). All clinical placements are initiated by the Office of Clinical and Field Experience. Students involved in any clinical experience need to undergo a background study (once per academic year) to assess misdemeanor and felony conviction records maintained at the Minnesota Bureau of Criminal Apprehension. This information is provided to districts for their determination of suitability. The Office of Clinical and Field Experience coordinates the background check process.

#### Student Teaching (119 Armstrong Hall) Director of Clinical and Field Experience: Tracy Pellet

Student teaching at Minnesota State University, Mankato is a result oriented, performance based 16-week program requiring the demonstration of an acceptable level of teaching performance. This performance is in the areas of planning and preparation, enhancing the learning environment, teaching for student learning, and professionalism. Multiple methods of assessment are used and evidence collected to provide a view of the student teacher's skills and abilities. These methods include direct observations of teaching activities by public school and university faculty, the use of videotaped lessons and activities for self-assessment, use of logs, participation in on-line activities, and participation in activities reflective of the professional responsibilities of teachers (e.g., parent conferences). The Director of Clinical and Field Experience requests placements for all student teachers in partner districts. Student teachers should not contact schools regarding their placement. Admission to the student teaching experience is contingent upon completion of a minimum of 95 semester credits, a cumulative grade point average of 2.75, grades of "C" or better for all program requirements, admittance to teacher/professional education, completion of all methods and professional education course work, completion and validation of formal application materials one semester in advance of student teaching semester (obtain specific dates from 119 Armstrong Hall), attendance at all preliminary student teaching meeting(s), submission of scores on the PRAXIS I (Reading/Writing/Math) test, recommendation of advisor, school district administration, co-operating teacher(s), and Director of Clinical and Field Experience, and completion of Minnesota State Police background check materials. Application materials are available in 119 Armstrong Hall.

#### POLICIES/INFORMATION

**GPA Policy.** All coursework listed in the Early Childhood Education degree requires a cumulative career GPA of 2.75 and a grade of "C" or better. Students must achieve at least a 2.75 GPA in professional education courses and be admitted to Professional Education.

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## Early Childhood Education

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**P/N Grading Policy.** With the exception of student teaching, all courses that meet program requirements must be taken for a grade.

### COURSE DESCRIPTIONS

Course descriptions with the following prefixes are listed in this section: Early Childhood Education.

#### **201 (2) Introduction to Early Childhood Education**

A first course for early childhood majors. Experience in pre-Kindergarten classrooms, understanding young learners, levels of instruction and the teaching role. F

#### **203 (1) Introduction to Early Childhood Education Lab**

Lab experiences in preschool settings, to be taken concurrently with 201. F

#### **205 (3) Service Learning: Society and the Environment**

##### **365 (2) Teaching Infants and Toddlers**

Develop curriculum and design environment for young children at three ages: infant, toddler, three to four year olds.

Pre: EEC 201 & 203. FCS 301, FCS 303, Coreq: EEC 366 S

##### **366 (1) Teaching Infants and Toddlers: Lab**

Clinical experiences to accompany 365 Interaction strategies, learning environments, parent communications. Coreq: EEC 365 S

##### **368 (3) Preprimary Methods and Materials**

Instructional strategies theories of curriculum and development, integrated curriculum for 3, 4, and 5 year olds. Coreq: EEC 369 F, S

##### **369 (1) Preprimary Methods and Materials: Lab**

Clinical experience to accompany EEC 368. Coreq: EEC 368 F, S

##### **370 (2) Kindergarten Methods and Materials**

Instructional strategies theories of curriculum and development, integrated curriculum for kindergarten children. Pre: EEC 365; Coreq: EEC 371 F, S

##### **371 (1) Kindergarten Methods and Materials: Lab**

Clinical experiences to accompany 370. Coreq: EEC 370 F, S

##### **435 (3) Teacher-Parent Relations in Education**

Emphasis on parent-teacher relationships for effective learning of children through the elementary grades. F, S

##### **440 (4) Primary Grade Literacy Methods**

Students will investigate developmentally appropriate reading and literacy curriculum and methodology for primary grade students. Course will include strategies for teaching literacy. F

##### **441 (1) Primary Grade Literacy Methods Lab**

Clinical field experience to accompany EEC 440. Students will observe and teach primary age children. Required 30 contact hours in an primary grade classroom. Students will plan and implement developmentally appropriate activities/lessons related to teaching literacy. F

##### **442 (4) Primary Grade Inquiry Block Methods**

Students will investigate developmentally appropriate methods and materials for the teaching of math, science, and social studies in the primary grades. Course will include techniques on how to plan an interdisciplinary approach to teaching math, science, and social studies. F

##### **443 (4) Primary Grade Inquiry Block Methods Lab**

Clinical field experience to accompany EEC 442. Students will observe and teach primary age children. Requires 30 contact hours in an primary grade classroom. Students will plan and implement developmentally appropriate activities/lessons related to math, science, and social studies. F

##### **466 (6) Prekindergarten Student Teaching and Seminar**

Student teaching with prekindergarten children; weekly seminar.

Pre: EEC 365 F, S

##### **474 (6) Student Teaching Elementary**

To provide the experienced teacher an opportunity to use skills learned in previous experiences.

Pre: Admission to student teaching F, S

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## Earth Science

*College of Social & Behavioral Sciences*

*Department of Geography*

7 Armstrong Hall • 507-389-2617

Web site: [www.mnsu.edu/dept/geog](http://www.mnsu.edu/dept/geog)

[www.mnsu.edu/dept/geol](http://www.mnsu.edu/dept/geol)

Director: Donald Friend, Ph.D.

The earth science program covers a wide range of scientific disciplines and their relationship with our environment and our lives. Courses in chemistry, geography, astronomy, physics, geology, and biology are needed to fulfill degree requirements. The program is administered through the Department of Geography.

**Admission to Major** is granted by the department.

Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

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### EARTH SCIENCE BA, BS

#### **Required for Major (Core, 43 credits):**

AST	101	Introduction to Astronomy (3)
AST	102	Introduction to the Planets (3)
BIOL	100	Our Natural World (4)
CHEM	201	General Chemistry I (5)
GEOG	101	Introductory Physical Geography (3)
GEOG	217	Weather (3)
GEOG	315	Geomorphology (3)
GEOG	410	Climatic Environments (3)
GEOL	121	Physical Geology (4)
GEOL	122	Earth History (4)
GEOL	201	Elements of Mineralogy (4)

PHYS 211 Principles of Physics I (4)

**Required Electives for Major (6 credits):**

Choose six credits from the following:

AST 125 Observational Astronomy (3)  
 BIOL 432 Limnology (4)  
 GEOG 373 Introduction to GIS (4)  
 GEOG 412 Advanced Weather (4)  
 GEOG 420 Conservation of Natural Resources (3)  
 GEOG 440 Field Studies: Colorado  
 GEOG 440 Field Studies: Field Methods  
 GEOG 480 Seminar: Snow and Ice (3)  
 GEOL 270 Structural Geology (4)  
 GEOL 350 Environmental Geology (4)  
 GEOL 370 Geotectonics (2)

**Required for Bachelor of Arts (BA) degree ONLY:**

Language (8)

**Minor Required: None.**

**EARTH SCIENCE BS TEACHING**

Requirements for the Earth Science, Teaching major can be found in the SCIENCE TEACHING section of this bulletin.

**EARTH SCIENCE MINOR**

**Required General Education for Minor (17 credits):**

AST 101 Introduction to Astronomy (3)  
 PHYS 100 Cultural Physics (3)  
 CHEM 100 Chemistry in Society (4)  
 BIOL 100 Our Natural World (4)  
 GEOG 101 Introductory Physical Geography (3)

**Required for Minor (Core, 14 credits):**

GEOL 121 Physical Geology (4)  
 GEOL 122 Earth History (4)  
 GEOG 217 Weather (3)  
 GEOG 315 Geomorphology (3)

**Required Electives for Minor (3 credits):**

Choose one from the following:

AST 102 Introduction to the Planets (3)  
 GEOG 410 Climatic Environments (3)  
 GEOG 420 Conservation of Natural Resources (3)

**POLICIES/INFORMATION**

**GPA Policy.** A GPA of 2.0 or higher in a major or minor is required for graduation.

Refer to the College regarding required advising for students on academic probation.

**P/N Grading Policy.** All courses in earth science must be taken for a letter grade.

## Economics

*College of Social & Behavioral Sciences,  
 Department of Economics  
 150 Morris Hall • 507-389-2969  
 Web site: [www.mnsu.edu/dept/economics](http://www.mnsu.edu/dept/economics)*

Chair: Ved Sharma

David R. Abel, Ashok Chowdhury, Atrayee Ghosh Roy, Steven Hickerson, Donald Renner, Richard Schiming, Robert Simonson, Arlen Skorr, Gerald Smith, Arnold Wells

Economics aims to provide the student with the basic materials and tools of analysis used to understand our present economic system, and to organize data for decision-making purposes in both short and long-range planning. It is designed to help those contemplating business or other careers as well as those who are preparing to teach in the social studies.

**Admission to Major.** Students enrolling in 300-400 level courses must be admitted to the program. Admission is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

**ECONOMICS BA**

**Required for Major (Core, 22 credits):**

ECON 201 Principles of Macroeconomics (3)  
 ECON 202 Principles of Microeconomics (3)  
 ECON 207 Business Statistics (4)  
 ECON 355 Intermediate Microeconomics (3)  
 ECON 356 Intermediate Macroeconomics (3)  
 ECON 445 Survey of Economic Ideas (3)  
 ECON 482 Senior Seminar (3)

**Required Electives for Major (9 credits):**

ECON xxx ECON xxx ECON xxx

**Required for Bachelor of Arts (BA) degree ONLY:**

Language (8)

**Required Minor: Yes. Any.**

**ECONOMICS BS**

**Required for Major (Business Foundation Requirements, 38 credits):**

MATH 112 College Algebra (4)  
 COMS 101 Introduction to Microcomputers (3)  
 MGMT 200 Introduction to MIS (3)  
 BLAW 200 Legal, Political and Regulatory Environment of Business (3)  
 ACCT 200 Financial Accounting (3)  
 ACCT 210 Managerial Accounting (3)  
 MRKT 310 Principles of Marketing (3)  
 MGMT 330 Principles of Management (3)  
 MGMT 346 Production and Operations Mgmt (3)  
 MGMT 395 Personal Adjustment to Business (1)  
 MGMT 481 Business Policy and Strategy (3)  
 BED 345 Business Communications (3)  
 FINA 362 Business Finance (3)

**Required for Major (Core, 25 credits):**

ECON 201 Principles of Macroeconomics (3)  
 ECON 202 Principles of Microeconomics (3)  
 ECON 207 Business Statistics (4)

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## Economics

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ECON	355	Intermediate Microeconomics (3)
ECON	356	Intermediate Macroeconomics (3)
ECON	420	International Economics (3)
ECON	445	Survey of Economic Ideas (3)
ECON	482	Senior Seminar (3)

### Required Electives for Major (6 credits):

ECON	xxx	ECON	xxx
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### Required Minor: None.

### ECONOMICS SPECIALIZATIONS

#### LABOR ECONOMICS

Labor economics provides a useful and necessary focus leading toward employment in a variety of occupations such as personnel specialist manpower analyst, contract compliance specialist and labor-management relations.

#### Recommended Courses for Specialization

ECON	403	Labor Problems (3)
ECON	406	Collective Bargaining (3)
ECON	408	Government Regulation of Labor Relations (3)
MGMT	440	Human Resource Management (3)
MGMT	442	Compensation Management (3)
MGMT	444	Organization Design (3)
MGMT	480	Human Behavior in Organizations (3)

#### ECONOMICS OF THE PUBLIC INTEREST

A background useful in securing positions in many federal, state and city government departments. In addition, many large corporations have full-time staff employees to handle areas of public interest.

#### Recommended Courses for Specialization

ECON	314	Current Economic Issues (3)
ECON	411	Urban Economics (3)
ECON	412	Resource and Environmental Economics (3)
ECON	420	International Economics (3)
ECON	425	Social Control of Economic Activity (3)
ECON	440	Public Finance (3)
ECON	462	Econometrics (3)

#### FINANCIAL ECONOMICS

An emphasis useful in the pursuit of careers in financial institutions and government agencies. Banks and other financial intermediaries hire economics majors for various roles. Internships can often be arranged.

#### Recommended Courses for Specialization

ECON	305	Money and Banking (3)
ECON	405	Monetary Analysis (3)
ECON	420	International Economics (3)
FINA	464	Financial Institutions and Markets (3)
FINA	482	Commercial Bank Management (3)
BLAW	455	Legal Aspects of Banking and Finance (3)

#### Graduate School Preparation

Students who are considering graduate school in economics should note that the following courses in mathematics are typically required for admission to graduate school in economics:

MATH	121, 122	Calculus I and II
MATH	247	Linear Algebra

The following courses are recommended as well:

ECON	462	Econometrics
MATH	321	Ordinary Differential Equations

Students who may be interested in applying to graduate school are advised to contact a member of the department as soon as possible for further guidance and information.

### ECONOMICS MINOR

#### Required for Minor (Core, 6 credits)

ECON	201	Principles of Macroeconomics (3)
ECON	202	Principles of Microeconomics (3)

#### Required Electives for Minor (12 credits)

ECON	xxx	ECON	xxx
ECON	xxx	ECON	xxx

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### POLICIES/INFORMATION

**P/N Grading Policy.** ECON 498 must be taken as P/N grading.

**GPA Policy.** A minimum cumulative grade point average of 2.0 is required for all courses taken in the major and minor.

**Center for Economic Education.** The Center for Economic Education seeks to improve the teaching of economics in elementary and secondary schools. Working in close cooperation with the Minnesota Council on Economic Education and the National Council on Economic Education, the center provides teacher instruction, research, library lending and other services to area schools. Begun in 1964, the Center conducts an annual Economics Challenge in which teams of high school students compete to demonstrate their understanding of economics.

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### COURSE DESCRIPTIONS

#### 100 (3) An Introduction to the US Economy

Brief description of the operation of the US economic system illustrated by a discussion of current economic policies, issues, and problems. No credit toward a major, minor, or area with economics as a core, or if credit has been earned in ECON 201 and/or 202, or equivalent. F, S

#### 199 (1-2) Clep Economics

#### 201 (3) Principles of Macroeconomics

Emphasis on forces influencing employment and inflation. Current problems of the economy are stressed along with tools government has to cope with them. F, S

#### 202 (3) Principles of Microeconomics

Examines decision making by the individual firm, the determination of prices and wages, and current problems facing business firms. F, S

#### 207 (4) Business Statistics

Basic statistical methods including measures of central tendency and dispersion, probability, probability distributions, sampling, problems of estimation and hypothesis



esis testing in the case of one and two sample means and proportions. Chi-Square, one-way analysis of variance, simple regression and correlation analysis, and brief introduction to multiple regression analysis. Use of computer statistical packages required.  
Pre: MATH 112 or equivalent F, S

### 300 (3) Statistics for Social Sciences

Basic statistical methods including sampling design, research methods, measures of central tendency and dispersion, sampling, problems of estimation and hypothesis testing, also Chi-Square, ANOVA and simple regression and correlation. Use of computer statistical packages.  
V

### 305 (3) Money and Banking

A descriptive and analytical study of the basic principles of money, banking, and finance as they are related to business and public policy.  
Pre: ECON 201 and 202 F, S

### 314 (3) Current Economic Issues

Elementary economic background and analysis of housing, medical care, inflation, unemployment dilemma, pollution, poverty and affluence, balance between public and private sectors, transportation, urban problems, and other issues will be covered in this course.  
ALT-S

### 355 (3) Intermediate Microeconomics

A survey of imperfect competition, multiple-product firms, multiple-plant firms, and interest theory, designed to develop a system of economic thought.  
Pre: ECON 201 and 202 F, S

### 356 (3) Intermediate Macroeconomics

Study of factors determining aggregate level of production, employment, inflation, and implications of monetary and fiscal policies.  
Pre: ECON 201 and 202 F, S

### 403 (3) Labor Problems

Employment, wages, and economic security. The structure and impact of labor organizations and labor legislation.  
Pre: ECON 201 and 202 F, S

### 404 (3) Economics of Human Resources

Quantitative and qualitative aspects of human resources; human capital; changing population structures; economic decisions within the household; intergenerational transfers; earnings differentials by race and gender; pensions and social security; public policy towards human resources.  
Pre: ECON 201 and 202

### 405 (3) Monetary Analysis

A detailed examination of the Federal Reserve System and monetary policy. The topics will include a history of the Federal Reserve and its monetary tools and strategies: Monetarism, the demand for money, the money supply process, and the impact of financial deregulation on federal policy.  
Pre: ECON 305 F

### 406 (3) Collective Bargaining

Emphasis on philosophy, structure, process of negotia-

tion, grievances, arbitrations, important developments and trends, and economic impact of collective bargaining.  
Pre: ECON 201 and 202 S

### 408 (3) Government Regulation of Labor Relations

A historical review of the past public policy concerning labor organizations, an analysis of the economic causes and effects of the negotiations of labor, current economic problems in labor legislation, and the role of federal and state governments in the industrial relations.  
Pre: ECON 201 and 202 F

### 410 (3) Quantitative Analysis in Economics

This course will introduce the student to the use of mathematics in economic analysis. Topics include equilibrium analysis, metric algebra and linear models, comparative statistics and derivatives, optimization, dynamics and integration, and first-order differential equations.  
Pre: ECON 201,202, 207, 355, 356, and MATH 112 V

### 411 (3) Urban Economics

Economics forces which account for the development of cities and application of principles to some of the major problems of the modern urban community.  
Pre: ECON 201 and 202 F

### 412 (3) Resource and Environmental Economics

Concepts and techniques for evaluating the alternative uses, management and development of natural resources.  
Pre: ECON 201 and 202 F

### 420 (3) International Economics

The economic rationale for interregional trade: emphasis on current problems.  
Pre: ECON 201 and 202 F

### 425 (3) Social Control of Economic Activity

Considers the role of government in the implementation of social values such as freedom, equality, efficiency and justice in those areas where markets are imperfect or fail. Theoretical, historical and philosophical treatment of these issues as manifested in the development of the antitrust laws and economic and social regulation.  
Pre: ECON 201 and 202 ALT-S

### 429 (3) Economic Education

Fundamental ideas and structure of economics with emphasis on the application of such ideas in the K-12 school curriculum.  
V

### 440 (3) Public Finance

Public expenditures, taxes and other revenues, debts and financial administration at federal, state, and local levels.  
Pre: ECON 201 and 202 S

### 445 (3) Survey of Economic Ideas

A survey and analysis of the development of economic ideas treated in historical perspective.  
Pre: ECON 201 and 202 F

### 446 (3) American Economic Development

An examination of major trends and events of US history from colonial times to the present, using tools of economic analysis. Major topics include role of trans-

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## Economics

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portation, economic impact of the Civil War, role of government in the economy, trends in money and banking, and the Great Depression.

Pre: ECON 201 and 202 V

### 450 (3) Economic Development

Economic underdevelopment and the relationships between mature economies and developing nations.

Pre: ECON 201 and 202 F

### 462 (3) Econometrics

The study of methods and techniques for building econometric models with the goal of forecasting and measurement of the economic relationships by integrating economic theory and statistics in it.

Pre: ECON 201, 202, and 207 ALT

### 471 (3) Economic, Ethics and Society

Analysis of theoretical constructs of society and economics. Specific attention will be given to economic questions which have a specific relationship to policy questions and the discrimination of values.

Pre: ECON 201 and 202 S

### 480 (1-3) Seminar in Economics

Pre: ECON 201 and 202 V

### 481 (1-3) Readings in Economics

F, S

### 482 (3) Senior Seminar

This course will be required of all economics majors and is intended to facilitate the synthesis of the economics concepts learned in other courses. Students will undertake a research and writing assignment as a course requirement.

Pre: ECON 355 and 356 S

### 497 (1-8) Internship

Supervised experience in business, industry, state institutions or federal institutions for economics students.

Pre: ECON 201 and 202 F, S

### 498 (3) Internship

Pre: ECON 201 and 202 F, S

### 499 (1-3) Individual Study

Pre: ECON 201 and 202 F, S

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## Electrical Engineering

*College of Science, Engineering and Technology*

*Department of Electrical & Computer Engineering and Technology*

137 Trafton Science Center S • 507-389-5747

Web site: [www.ee.mnsu.edu](http://www.ee.mnsu.edu)

Chair: Bill Hudson, Ph.D.

Program Coordinator: Rajiv Kapadia, Ph.D.

Carl Gruber, Ph.D., Tom Hendrickson, Ph.D., Han-Way Huang, Ph.D., Bill Hudson, Ph.D., Rajiv Kapadia, Ph.D., Muhammad Khaliq, Ph.D., Paul Lindfors, Ph.D., Julio Mandojana, Ph.D., Ramakrishna Nair, Ph.D., George O'Clock, Ph.D.

Electrical Engineering (EE) encompasses research, de-

velopment, design and operation of electrical and electronic systems and their components. This program leads to a Bachelor of Science in Electrical Engineering (BSEE). The primary objective of the Electrical Engineering program is to educate engineering professionals who possess a sound design and analytical background coupled with a strong laboratory experience. This means that the department expects to prepare its graduates equally for:

1. Entry into the engineering work environment with well developed design and laboratory skills.
2. Further study toward advanced degrees in engineering and other related disciplines.
3. Advancement into managerial ranks and/or entrepreneurial endeavors.

In support of this objective, the program provides a curriculum including the following components:

1. A strong background in the physical sciences, mathematics, and the engineering sciences including extensive hands-on laboratory instruction.
2. An integrated design component to the curriculum including instruction in basic practices and procedures, creativity, control, economics, and synthesis. The process begins with basic instruction during the freshman year and concludes with a capstone design project.
3. A choice of several subdisciplines in their senior level elective offerings (digital, controls, communications, microelectronics design and fabrication).
4. Courses in business and economics to promote awareness of management and the economic aspects of engineering.
5. Preparation for continuing study and professional development.

The curriculum offers students the opportunity to emphasize a number of specialized areas including digital systems, wireless communications, controls, and material sciences. During the senior year, students must take the first step toward registration as a professional engineer by taking the Fundamentals of Engineering, FE or EIT, examination. The electrical engineering program is accredited by the Engineering Accreditation Board for Engineering and Technology.

MSU offers a 3/2 program with regional Liberal Arts colleges. Contact the department for more information.

Recommended high school preparation is two years of algebra, one year of geometry, one-half year of trigonometry, one-half year of college algebra, and a year each of physics and chemistry. Without this background it may take longer than four years to earn the degree. The first two years students take science and mathematics courses common to all branches of engineering (pre-engineering), as well as supporting work in English, humanities and social sciences. Second-year electrical engineering students complete physics, mathematics and 200-level engineering science courses. Some specialization for a particular engineering major occurs in the second year.

**Admission to Major.** Admission to the college is necessary before enrolling in 300- and 400-level courses.

## Electrical Engineering

Admission to the college is granted by the department. Minimum college admission requirements are:  
 - a minimum of 32 earned semester credit hours.  
 - a minimum cumulative GPA of 2.00 (C).  
 Contact the department for application procedures.

During the sophomore year, students should submit an application form for admission to the junior-level electrical engineering program. Admission to the program is selective and, following application to the department, subject to approval of the faculty. The department makes a special effort to accommodate transfer students and has joint admissions agreements with most community colleges. Only students admitted to the program are permitted to enroll in upper-division EE courses. No transfer credits are allowed for upper-division EE courses except by faculty review followed by special written permission.

Before being accepted into the program and admitted to 300-level electrical engineering courses (typically in the fall semester), a student must complete a minimum of 46 semester credits as follows:

- General Physics (calculus-based) (10 credits)
- Calculus and Differential Equations (16 credits)
- Electrical Engineering Circuit Analysis I and II (including laboratory) (7 credits)
- Chemistry (5 credits)
- English Composition (4 credits)
- Computer Sciences (FORTRAN, C, or C++) (2 credits)
- Statics and/or Dynamics (3 credits)

A cumulative grade-point average of 2.5 for all science, math and engineering courses must have been maintained. Grades must be C or better for courses to be accepted. MSU students should complete the pre-engineering courses listed under the major.

**GPA Policy:** Students graduating with a degree in Electrical Engineering must have 1) completed a minimum of 20 semester credit hours of upper division EE course work; 2) have a cumulative GPA of 2.25 or higher on all upper division MSU EE coursework; 3) have completed their senior design sequence at MSU; and 4) have taken the FE exam and achieved the competency level set by the department.

**P/N Grading Policy:** A student who majors in EE must elect the grade option for all required courses including general education courses listed by number even if offered by another department.

### ELECTRICAL ENGINEERING BS

#### Required for Major (Prerequisites, 47 credits):

CHEM	201	General Chemistry I (5)
COMS	171	Intro. to C++ Programming (2)
EE	230	Circuit Analysis I (3)
EE	231	Circuit Analysis II (3)
EE	240	Evaluation of Circuits (1)
ENG	101	Composition (4)
MATH	121	Calculus I (4)
MATH	122	Calculus II (4)
MATH	223	Calculus III (4)

MATH	321	Ordinary Differential Equations (4)
ME	212	Statics (3)
PHYS	221	General Physics I (5)
PHYS	222	General Physics II (5)

#### Required for Major (General Studies, 19 credits):

ENG	271	Technical Communication (4) <b>or</b>
SPEE	233	Public Speaking for Technical Professionals (3)

\* SPEE 102 Public Speaking (3) may be substituted.

Choose a minimum of 13 credits from Humanities and Social Sciences courses:

#### Humanities (6-7 credits)

HUM xxx HUM xxx HUM xxx

In general, graduation credit toward the humanities requirement is not allowed for any course in subject areas such as speech communication, writing, art, music, or theatre that involve performance or practice of basic skills. Courses acceptable by department or program include: ART 160, 260, 261, 413, 416, 419, 460, 462, 463, 466, 469; ENG 112, 113, 114, 271, 320, 321, 325, 327, 328, 331, 332, 400, 401, 402, 403, 405, 406, 416, 478, 479, 481; FOREIGN LANGUAGE 200 level or above; HIST all except 490 and higher; HUM 150, 155, 250, 251\*, 280, 281, 282; MASS 110, 411, 412; MUS 120, 125, 126, 220, 221, 222, 422, 423, 424, 425, 426, 429, 432; PHIL all except 490 and higher; SPEE 100-203, 300, 315-403, 412, 413; THEA 100, 252, 283, 285, 481, 482. For other acceptable courses, please consult with your advisor.

\*Note: EET 125 may be substituted for HUM 250

#### Social Sciences (6-7 credits)

SS xxx SS xxx SS xxx

Courses acceptable by department or program include: ANTH all courses except 480 and above; GEOG 100, 101, 103, 340, 341, 425, 430, 435, 437, 445, 446, 450, 454, 456; POL all except 420, 421, 422, 490 and above; PSYC all except 201, 202, 291, 303, 390, 391, 473 and above; SOC all except 201, 202, 466, 469, 470, 485 and above; URBS all except 301, 302, 481 and above; WOST all except 260, 277, 290, 320, 430, 460 and above. For other acceptable coursework, please consult your advisor.

At least 3 credits of the courses selected to complete the above requirements must be 300 level or above. At least one 300 level course must follow a lower level course in the same subject area.

Choose one course from the following:

ECON	201	Principles of Macroeconomics (3)
ECON	202	Principles of Microeconomics (3)

#### Required Core for Major (Engineering, 48 credits):

EE	101	Introduction to Engineering I (1)
ME	103	Introduction to Engineering III (1)
EE	244	Introduction to Digital Systems (2)
EE	254	Digital and Circuits Lab (1)
EE	303	Introduction to Solid State Devices (3)
EE	332	Electronic Circuits and Devices (4)
EE	333	Digital and Analog Electronic Systems (4)
EE	334	Microprocessor Engineering (3)

## Electrical Engineering

EE 337 Principles of Engineering Design (1)  
 EE 341 Signals and Systems (3)  
 EE 342 Electronics Design Laboratory (1)  
 EE 344 Design and Evaluation of Microprocessors (1)  
 EE 350 Engineering Electromagnetics (4)  
 EE 353 Communication Systems Engineering (2)  
 EE 358 Control Systems (3)  
 EE 363 Communication Systems Laboratory (1)  
 EE 368 Control Systems Laboratory (1)  
 EE 467 Principles of Engineering Design I (2)  
 EE 477 Principles of Engineering Design II (2)  
 EE 482 Electromechanics (3)  
 EE 488 Thermal Systems Engineering (2) or  
 ME 299 Thermal Analysis (2)  
 ME 291 Engineering Analysis (3) or MATH 354  
 Concepts of Probability and Statistics (3)

### Required for Major (Business, 5 credits):

EE 250 Engineering Economics (2)  
 Choose one course from the following list:  
 BLAW 200, FIRE 362, MGMT 330 or 440, MRKT 310

### Required Electives for Major (9 credits):

Choose a minimum of 9 credits from the following courses. Two courses must be in sequence (same subject area):

EE 453	EE 462	EE 471
EE 472	EE 475	EE 476
EE 479	EE 480	EE 481
EE 484	EE 487	

### Required Minor: None.

## COURSE DESCRIPTIONS

### 101 (1) Introduction to Engineering I

Discussion of historical, educational, and professional aspects of engineering. Problem solving, study approaches and techniques, and the motivation behind modern engineering education and practices. Lab sessions cover the basics of word processing, spreadsheets, databases, drawing, and graphing programs. F

### 102 (1) Introduction to Engineering II

Basic engineering drafting principles and conventions, such as orthogonal projection, isometric drawing, dimensioning, and section views. Introduction to and use computer aided drafting system. V

### 230 (3) Circuit Analysis I

This course is meant to develop Electrical Engineering Circuit Analysis skills in DC and AC circuits. It includes circuit laws and theorems, mesh and node analysis, sinusoidal steady state analysis, impedance/admittance concepts, resonant circuits, frequency response, and first order circuit transients.

Pre: PHYS 222 or concurrent, MATH 321 or concurrent F

### 231 (3) Circuit Analysis II

Continuation of Circuit Analysis I to include special topics in circuit analysis.

Pre: EE 230 and 240, MATH 321, PHYS 222 S

### 240 (1) Evaluation of Circuits

Laboratory support for EE 230. Experimental evaluation of circuits including operational amplifier circuits. Verification of the theoretical concepts covered in EE 230 will be realized in the laboratory.

Pre: Must take concurrently with EE 230 F

### 244 (2) Introduction to Digital Systems

A study of theoretical and practical aspects of digital systems including Boolean algebra, number systems, logic devices, Karnaugh maps, and sequential machines.

Pre: MATH 122 S

### 250 (2) Engineering Economics

Overview of accounting and finance and their interactions with engineering, manufacturing, marketing, R&D and sales. Lectures include the development and analysis of financial statements, time value of money, decision making tools (stochastic and non-stochastic), ratio analysis, cost of capital, cash flow, rate of return and forecasting techniques. F

### 253 (1) Logic Circuits Lab

Laboratory support to complement EE 244. Experimental evaluation of digital logic devices including logic gates, flipflops, sequential machines, and other devices as needed. Some simulation and testing of PAL devices and memory IC's will be attempted.

Pre: EE 230 and concurrently with EE 244 S

### 254 (1) Digital and Circuits Lab

Laboratory support for EE 231 and EE 244. Experimental evaluation of AC and transient circuits, digital logic devices including logic gates, flip flops, and sequential machines. Some simulation and testing of PAL devices and memory IC's.

Pre: EE 230, 240 and concurrently with EE 231 and 244 S

### 303 (3) Introduction to Solid State Devices

Crystal structure, energy band theory, conduction and optical phenomenon in semiconductors, metals and insulators. Equilibrium and non-equilibrium charge distribution, generation, injection, and recombination. Analysis and design of PN-junctions, bipolar transistor, junction and MOS field-effect transistors. Introduction to transferred electron devices and semiconductor diode laser.

Pre: PHYS 222, and MATH 321 F

### 304 (1) Introduction to Solid State Devices Lab

Laboratory support for EE 303. Experiments include resistivity and sheet resistance measurements of semiconductor material, probing material, probing of IC chips, PN-junction IV and CV measurements, BJT testing to extract its parameters, MOSFET testing and evaluating its parameters, cv-measurements of MOS structure, and familiarization with surface analysis tools.

### 332 (4) Electronic Circuits and Devices

Electronic amplifier concepts and real operational amplifier networks. Semiconductor device characteristics including Diodes, BJT's, JFET's, MOSFET's, and GaAsFET's. Also discuss DC bias circuits, along with

## Electrical Engineering

small signal, large signal, and PSPICE device modeling and analysis. Small-signal amplifiers (single and multi-stage), power amplifiers, differential amplifiers, and feedback amplifiers, concepts and design will all be discussed. Pre: EE 231, admission to EE program F

### 333 (4) Digital and Analog Electronic Systems

EE electronics sequence with EE 332. Feedback systems/stability; oscillator concepts and systems. Filters and tuned amplifiers. Design of IC operational amplifier. Hysteresis, bi-stability and nonlinear functional circuits; 555 timer. A/D and D/A converters. MOS and bipolar digital electronic circuits; memory. Electronic noise. Power switching devices. Pre: EE 332 S

### 334 (3) Microprocessor Engineering

Use of microprocessors and microcontrollers in engineering applications. Topics include assembly language programming, smart and programmable controllers, memory design including dynamic memory and direct memory access, bus standards and protocol, serial and parallel I/O, interfacing with other programmable systems, maskable and non-maskable interrupts. Pre: EE 244 F

### 337 (1) Principles of Engineering Design

Application of the design techniques in the engineering profession. Electrical engineering project and program management and evaluation including computer assisted tools for planning and reporting, design-to-specification techniques and economic constraints. Pre: Admission to EE program S

### 341 (2) Signals and Systems

Analysis of linear systems and signals in the time and frequency domain. Laplace and Fourier transforms. Z-transform and discrete Fourier transform. Pre: MATH 321 F

### 342 (1) Electronics Design Laboratory

Properties of materials; measurement of electronic device characteristics. Experimental evaluation of electronic amplifier designs. Experimental characteristics of feedback topologies; oscillator and op-amp circuit design and design verification. Power amplifier graphical design. Pre: EE 231 and 332 taken concurrently F

### 344 (1) Design and Evaluation of Microprocessors

Laboratory support for EE 334. Study of various single board computers through assembly language programming. Basic input/output, ports, memory, addressing, timers, A/D converters, serial and parallel communication protocol, and interrupt processing. One half design credit. Pre: Concurrent with EE 334 F

### 350 (4) Engineering Electromagnetics

Vector fields. Electrostatic charges, potential and fields; displacement. Steady current/current density; magnetostatic fields, flux density. Materials properties. Faraday's Law and Maxwell's equations. Skin effect. Wave propagation, plane waves, guided waves. Radiation and antennas. Transmission line theory. Pre: MATH 223 and PHYS 222 S

### 353 (2) Communication Systems Engineering

Signals and Systems, Fourier transforms, Parseval's theorem. Autocorrelation functions and spectral density functions. Information theory. Noise and noise figure, probability and statistics. Transformation of random variables, probability of error and bit error rate. Modulation and demodulation. Overview of analog, sampled analog and digital communication systems. Spread spectrum systems. Pre: EE 333 S

### 358 (3) Control Systems

Theory and principles of linear feedback control systems. Analysis of linear control systems using conventional techniques like block diagrams, Bode plots, Nyquist plots and root-locus plots. Introduction to cascade compensation: proportional, derivative and integral compensation. State space models. Pre: EE 341 S

### 363 (1) Communication Systems Laboratory

Measurement techniques using the oscilloscope, spectrum analyzer and network analyzer. Signals and spectra. Frequency response. Noise and noise figure measurements. Intermodulation products. Amplitude and frequency modulation/demodulation. Sampling, aliasing, and intersymbol interference. Bit error measurement. Pre: Concurrent with EE 353 S

### 368 (1) Control Systems Laboratory

Laboratory support for EE 358. Experimental evaluation of basic control system concepts including transient response and steady state performance. Analog and digital computers. Pre: EE 341 and concurrent with EE 358 S

### 380 (2) Advanced Digital System Design

Combinatorial circuit design with Karnaugh map and tabular method; using MSI chip as building blocks in a digital system; circuits of latches, flip-flops, and registers; design of counters; types of sequential circuits; design process of sequential circuits; minimization of sequential circuit design by performing state reduction and state encoding optimization; syntax and semantics of VHDL language; using VHDL in modeling and simulation digital circuits; implementation of digital system in complex programmable logic devices (CPLDs). F

### 439 (4) Electronics for Non-Electrical Engineering Majors

Topics covered include power supplies, operational amplifiers and feedback circuits, linear and nonlinear circuits and applications, analog switches, digital logic gates and devices, A/D and D/A converters, microprocessors, and basic control systems. Pre: PHYS 221 and 222 V

### 453 (3) Advanced Communications Systems Engineering

Fundamentals of RF, microwave, and optical communication systems. Advanced information theory. Digital modulation techniques. Phase-lock loop receivers and frequency synthesizers. Characterization of digital data



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## Electrical Engineering

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transmission systems. Equalization. Synchronization. Coding. Data compression. Nonlinear systems analysis. Amplitude and phase distortion. AM-PM conversion. Intermodulation and cross-modulation. Advanced spread spectrum systems.

Pre: EE 353 and 363

F

### 462 (4) Advanced Digital System

A study of finite state machine design, hardware description language, principles of instruction execution, instruction pipe lining, superscalar processor design, multiprocessor systems and memory system design.

Pre: EE 333 and 334

F

### 467 (2) Principles of Engineering Design I

Design and organization of engineering projects. Project proposals, reporting, feasibility studies, and interpretation. Specification preparation, interpretation, and control. Issues involving creativity, project planning and control, and intellectual property rights. Students enrolled in this course must initiate and complete a design project in a small team format.

Pre: EE 337 and senior standing

F

### 471 (3) Advanced Control Systems

Develop design and analysis techniques for continuous and discrete time control systems including pole placement, state estimation and optimal control.

Pre: EE 358 and 368

F

### 472 (3) Digital Signal Processing

Develop design and analysis techniques for discrete signals and systems via Z-transforms, Discrete Fourier Transforms, implementation of FIR and IIR filters. The various concepts will be introduced by the use of general and special purpose hardware and software for digital signal processing.

Pre: EE 341

S

### 475 (3) Integrated Circuit Engineering

Introduction to theory and techniques of integrated circuit fabrication processes, oxidation, photolithography, etching, diffusion of impurities, ion implantation, epitaxy, metallization, material characterization techniques, and VLSI process integration, their design and simulation by SUPREM. Same as PHYS 467.

Pre: EE 303 and 332

F

### 476 (4) Antennas, Propagation, and Microwave Engineering

Principles of electromagnetic radiation, antenna parameters, dipoles, antenna arrays, long wire antennas, Microwave antennas, Mechanisms of radiowave propagation, scattering by rain, sea water propagation, guided wave propagation, periodic structures, transmission lines, microwave/millimeter wave amplifiers and oscillators, MIC & MMIC technology.

Pre: EE 350

V

### 477 (2) Principles of Engineering Design II

Completion of design projects and reports. Lectures on ethics, issues in contracting and liability, concurrent engineering, ergonomics and environmental issues, econom-

ics and manufacturability, reliability and product lifetimes. Lectures by faculty and practicing engineers.

Pre: EE 467

S

### 479 (3) Superconductive Devices

Magnetic and superconducting properties of materials, microscopic theory of superconductivity and tunneling phenomenon. Josephson and SQUID devices, survey of computer memories, memory cell and shift register, A/D converters and microwave amplifiers. Integrated circuit technology and high temperature superconductors.

Pre: EE 303

V

### 480 (1) Integrated Circuit Fabrication Laboratory

Introduction to integrated circuit fabrication processes, device layout, mask design, and experiments related to wafer cleaning, etching, thermal oxidation, thermal diffusion, photolithography, and metallization. Fabrication of basic integrated circuit elements pn junction, resistors, MOS capacitors, BJT and MOSFET in integrated form. Use of analytic tools for in process characterization and simulation of the fabrication process by SUPREM. Same as PHYS 468.

Pre: Concurrent with EE 475

F

### 481 (1) VLSI Design Laboratory

Laboratory to accompany EE 484 VLSI design. Individual IC design projects will be assigned using IC layout tools and simulation software. Culminates in a group project fabricatable under MOSIS.

Pre: Concurrent with EE 484

S

### 482 (3) Electromechanics

An introduction to the processes, devices, and systems of electromechanical energy conversion. Transformers, dc machines, induction, and synchronous machines.

Pre: EE 230

F

### 484 (4) VLSI Design

VLSI technology. MOS and Bipolar transistor theory, SPICE models. Transistor structure and IC fabrication processes; layout design rules. Custom CMOS/BICMOS logic design and layout topologies; cell layout/chip partitioning/clocking. Bipolar/MOS analog circuit design and layout. Group design project. Library research study.

Pre: EE 333

S

### 487 (3) RF Systems Engineering

Overview of wireless communication and control systems. Characterization and measurements of two-port RF/IF networks. Transmission lines. Smith chart. Scattering parameters. Antenna-preselector-preamplifier interface. Radio wave propagation. Fading. RF transistor amplifiers, oscillators, and mixer/modulator circuits. Multiple access techniques. Transmitter/receiver design considerations. SAW matched filters.

Pre: EE 353 and 363

V

### 488 (2) Thermal Systems Engineering

Thermodynamic concepts, properties and laws. Thermodynamic cycles and energy conversion; control volume analysis. Heat transfer by conduction, convective flow and radiation. Heat sink design. Design problems in electron-

## Electronic Engineering Technology

ics packaging, reliability, thermoelectric effects and cooling devices. Environmental property sensors.

Pre: PHYS 222 and EE 333

V

**491 (1-4) In-Service**

**497 (1-6) Internship**

**499 (1-6) Individual Study**

## Electronic Engineering Technology

*College of Science, Engineering & Technology*

*Department of Electrical & Computer Engineering and Technology*

137 Trafton Science Center S • 507-389-5747

Chair: Bill Hudson, Ph.D.

Program Coordinator: Lindsay Hess, Ph.D.

Carl Gruber, Ph.D., Tom Hendrickson, Ph.D., Lindsay Hess, Ph.D., Han-Way Huang, Ph.D., Bill Hudson, Ph.D., Rajiv Kapadia, Ph.D., Muhammad Khaliq, Ph.D., Paul Lindfors, Ph.D., Julio Mandojana, Ph.D., Ramakrishna Nair, Ph.D., George O'Clock, Ph.D.

Electronic Engineering Technology is a technological field requiring the application of scientific and engineering knowledge and methods, combined with technical skills, in support of engineering activities. An electronic engineering technologist is a person who is knowledgeable in electronics theory and design and who understands state-of-the-art practices on digital and analog circuits and systems. Computers, controls/ automation, robotics, instrumentation, and communications are just a few fields open to engineering technologists.

Overall the program strives to prepare students for entry into the technical workforce with well developed skills. In particular, the department strives to ensure that its graduates have an ability to:

1. Apply knowledge of science, mathematics, and engineering
2. Design, and conduct experiments as well as analyze and interpret data
3. Design a system, component, or process to meet specified needs
4. Function effectively in teams
5. Identify, formulate, and solve engineering problems
6. Have an understanding of professional and ethical responsibilities
7. Communicate effectively

This program is accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET).

**Accreditation.** The Electronic Engineering Technology program is accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, Telephone: 410-347-7700.

**Admission to Major** is granted by the department.

Minimum program admission requirements are:

- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

### ELECTRONIC ENGINEERING TECHNOLOGY BS

It is strongly recommended that all EET students enroll in EET 101 Introduction to EET/CET (1) during their freshman year.

Students who do not have the required background for MATH 115 may have to take additional preparatory coursework as well. Consult with your major advisor to plan your general education and major requirements.

All students must complete a minimum of 12 semester credits of mathematics starting with Precalculus math and a minimum of 24 semester credits of combined mathematics and science courses.

#### Required General Education (15 credits):

ENG	101	Composition (4)
SPEE	102	Public Speaking (3)
MATH	115	Precalculus Math (4)
PHYS	211	Principles of Physics I (4)

#### Required Support Courses (18 credits):

COMS	110	Introduction to Computer Science (4)
COMS	111	Fundamentals of Computer Science I (4)
MATH	121	Calculus I (4)
MET	427	Quality Assurance (2)
Choose one of the following:		
COMS	112	Fundamentals of Computer Science II (4)
COMS	230	Applied Expert Systems (4)
COMS	271	C++ Programming (4)
COMS	280	System Analysis and Design (4)

#### Required for Major (Communication, Mathematics and Science, 16 credits):

ENG	271	Technical Communication (4)
MATH	127	Calculus II for Engineering Technology: Integration (2)
PHYS	212	Principles of Physics II (4)
CHEM	105	Introduction to Chemistry (3)
Choose one of the following:		
STAT	154	Elementary Statistics (3)
MATH	354	Concepts of Probability and Statistics (3)

#### Required Core for Major (EET, 55 credits):

EET	113	DC Circuits (3)
EET	114	AC Circuits (3)
EET	221	Electronic CAD (3)
EET	222	Electronics I (4)
EET	223	Electronics II (4)
EET	225	Digital Principles (3)
EET	241	Electronic Shop Practices (2)
EET	355	Electrical Power Systems (3)

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## Electronic Engineering Technology

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EET	400	Network Analysis (3)
EET	452	Operational Amplifier Applications (3)
EET	454	Microprocessors I (4)
EET	456	Communications I (4)
EET	458	Advanced Instrumentation (1)
EET	480	Automatic Controls (3)
EET	488	Senior Project Design I (1)
EET	489	Senior Project Design II (2)
EET	497*	Internship (3)

Choose a minimum of 6 credits from the following courses:

EET	425	EET	430	EET	455
EET	484	EET	486	EET	487
EET	492				

\* You may substitute one EET advanced elective for internship.

**Required Minor: None.**

### ELECTRONIC ENGINEERING TECHNOLOGY MINOR

**Required for Minor (Core, 13 credits):**

EET	112	Elementary Electronics (3)
EET	113	DC Circuits (3)
EET	114	AC Circuits (3)
EET	222	Electronics I (4)

**Required for Minor (Elective Options, 7-8 credits):**

#### DIGITAL OPTION

EET	225	Digital Principles (3)
EET	454	Microprocessors I (4)

#### ELECTRONICS OPTION

EET	223	Electronics II (4)
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Choose one of the following:

EET	452	Operational Amplifier Applications (3)
EET	455	Advanced Power Electronics (3)
EET	492	Integrated Circuit Technology (4)

#### NETWORKING OPTION

EET	230	Microcomputer Technology (4)
EET	430	Computer Networking I (4)

#### COMMUNICATIONS OPTION

EET	223	Electronics II (4)
EET	456	Communications I (4)

#### POWER OPTION

EET	223	Electronics II (4)
EET	355	Electrical Power Systems (3)

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### POLICIES/INFORMATION

**Graduation Policy.** Students graduating with a degree in Electronic Engineering Technology must have: 1) completed a minimum of 20 semester credit hours of upper division EET courses; 2) have a cumulative GPA of 2.0 or higher for all MSU EET coursework; and 3) have completed their senior design sequence at MSU.

**P/N Grading Policy.** A student who majors or minors in EET must elect the grade option for all required courses including general education courses listed by number even if offered by another department.

If the credits earned for composition, technical writing and speech courses equal less than 9 credits, either an advanced speech course or a course in English language literature must be selected as a general elective.

In addition to the transfer of credit policy described in this bulletin for students transferring to MSU from other schools, the electronic engineering program has additional policies:

1. All transfer student must take EET 221.
2. For courses taken at technical colleges/vocational technical schools and pertinent courses taken in the military the student may receive up to 8 credits upon review of course materials, grades and written approval by the program coordinator. The credit can be used for EET 112, 113 and 114. The student may also attempt to test out of EET 114, 222, 225 and 223.
3. For courses taken at community colleges and four-year colleges, up to 25 credits may be accepted if the transcript is from an ABET-accredited program. If the program is not accredited by ABET, up to 20 credits may be accepted. Grades of transfer credits must be C or better to be acceptable for substitution for required courses.

Testing for course credit will be available via prior application made with the program coordinator. Students may not apply for credit by examination for an EET course in which they were previously enrolled at MSU or for any EET course above EET 225.

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### COURSE DESCRIPTIONS

#### 101 (1) Introduction to EET/CET

Information and hands-on experiences regarding EET/CET courses and careers, creative problem solving, reverse engineering, group projects, introduction to EET/CET laboratories, computers and software, speakers from industry, and technical communications. One hour lecture and one hour lab per week. F

#### 112 (3) Elementary Electronics

Hands-on experiences in elementary electronics to easily and quickly develop basic knowledge of electronics related to everyday applications. A self paced format with an open laboratory is used. F, S

#### 113 (3) DC Circuits

A study of DC electrical circuits, Kirchhoff's laws, series and parallel circuits, inductors, capacitors, Thevenin's equivalent circuit theorem, and other network analysis theorems.

Pre: MATH 115, or concurrent F, S

#### 114 (3) AC Circuits

A study of AC circuits, power, phasors, series and parallel AC networks, and network analysis theorems.

Pre: EET 113 and MATH 115 F, S

#### 115 (3) Understanding Computers

A self-paced, interactive, multi-media course, for non-engineering students, exploring the basics of computer hardware. The course will cover concepts behind computer design and operation, exploring issues such as the need for RAM, Hard Drive memory, ROM, etc., the

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## Electronic Engineering Technology

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interaction between computer software and hardware, and related issues. F, S

### 116 (3) Communication - Past, Present & Future

This is an introductory course in the use of technology for communication. During the semester students will study the evolution of communications technology from early days to the present. This course will cover wireless, analog, and digital techniques including telephony, the internet, and mobile formats. For each topic the student will study theory and principles involved in the different types of communications. Modern techniques in digital communications will be discussed and demonstrated through simulation. A consumer example of digital communication will be given. F, S

### 117 (3) Introduction to Digital Electronics

Hands-on experiences in the use of digital integrated circuits, logic families. Students will study logic gates, number systems, flip flops, latches, registers, computer arithmetic and memory. A self paced format with an open laboratory format. V

### 125 (3) Perspective on Technology

Historical, cultural, ethical, philosophical, developmental, and creative aspects of engineering and technology as a discipline are explored. Course also provides a rudimentary examination of concepts and events leading to important innovations of recent times, including the use of AC voltages, microwave ovens, FAX machines, personal computers, traffic signals, and video games. Available for general education. F

### 221 (3) Electronic CAD

Drafting Principles involving use of computer electronic CAD software in laying out block diagrams, schematic diagrams, production drawings, graphical presentation data, and printed circuit board layout and construction. F

### 222 (4) Electronics I

An introduction to semiconductor theory and circuits; includes characteristics curves, biasing techniques and small signal analysis of FETs and MOSFETs, feedback concept, BJT and FETs frequency response.

Pre: EET 114 or concurrent

F

### 223 (4) Electronics II

Differential amplifier, linear and nonlinear operational amplifier, power amplifier, linear digital ICs, oscillators, power supplies, D/A, A/D conversion, four layered devices and their applications.

Pre: EET 222

S

### 225 (3) Digital Principles

A study of number systems, Boolean algebra, switching function minimization techniques, binary arithmetic, small scale and medium scale logic chips, programmable logic devices, latches, flip-flops, registers and counters, and sequential circuit design. S

### 230 (4) Microcomputer Technology

An introduction to the installation, configuration, upgrading, troubleshooting and repair of microcomputers. Basic knowledge of desktop systems, basic networking

concepts and printers will be introduced. Safety and common preventive maintenance procedures will be covered. Pre: EET 113 or permission of instructor S

### 241 (2) Electronic Shop Practices

An introduction to tools, equipment, materials, and techniques used in fabrication of electronic projects and printed circuit boards.

Pre: EET 222 and 221

S

### 355 (3) Electrical Power Systems

Generation and transmission of electrical energy. The study includes energy sources, generation of electrical energy, single and multiphase power, transformers, motors, generators, and energy distribution systems.

Pre: EET 114

F

### 393 (1-4) Practicum

Elective credit for approved experience in off-campus work related to EET major. Permission required. F, S

### 400 (3) Network Analysis

A course in network analysis that stresses time, frequency and Laplace transform domain techniques.

Pre: EET 114 and MATH 127

S

### 425 (3) Advanced Digital Design

A study of multiple-output switching functions optimization, flip-flops, registers and counters, programmable logic devices, synchronous sequential circuit design and synthesis, pulse mode and fundamental model sequential circuit design, test methods, and test vector generation.

Pre: EET 225

S

### 430 (4) Computer Networking I

An introduction to the basic foundations of computer networking. The course will encompass telecommunications, local area networks, wide area networks and wireless communication. Topics covered include the OSI model, the TCP/IP model, different network topologies and associated hardware, error detection and correction, protocols, and security.

Pre: EET 230 and COMS 112

F

### 431 (4) Computer Networking II

A continuation of EET 430. Router configurations, advanced LAN topologies, network configurations, protocols, and switching designs. Network troubleshooting and threaded case studies.

Pre: EET 430

S

### 452 (3) Operational Amplifier Applications

Operational amplifier circuits utilized in filters, sensors, comparators, voltage regulators, device testing, measurement systems, multipliers, phase-locked loops, and A/D converters. Differential amplifier basics. Linear integrated circuit processing.

Pre: EET 223 and MATH 121

F

### 454 (4) Microprocessors I

A study of microcomputer hardware and software fundamentals, the instruction set and the addressing modes of a microprocessor/microcontroller, assembly programming, basic I/O concepts, parallel I/O methods, asynchro-

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## Electronic Engineering Technology

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nous serial I/O method, synchronous serial I/O methods, A/O conversion, timer applications, etc.

Pre: EET 225 S

### 455 (3) Advanced Power Electronics

The half-wave rectifier with power loads, power semiconductor switches, thyristor states, controlled rectifiers, commutating circuits, AC voltage controllers (poly and single phase), motor controllers, DC-DC converters, and inverters.

Pre: EET 223 and 355 V

### 456 (4) Communications I

Communications principles & systems, practical engineering aspects involved in modulation-demodulation, receivers, transmitters & filters. Also included are radiation and antennas, guided waves, microwaves, and microwave systems.

Pre: EET 223 S

### 458 (1) Advanced Instrumentation

Experiences with electronic equipment and instrumentation including maintenance, repair, calibration, safety and component identification.

Pre: 30 hours of EET courses, or consent S

### 480 (3) Automatic Controls

Servomechanism analysis under transient and steady state conditions. Negative and positive feedback. Laplace transform analysis of feedback systems. Frequency response. System stability analysis using Bode plots and Root locus. Lead and velocity compensation. Analog computers. Microprocessor control and the analog/digital interface.

Pre: EET 400 F

### 484 (4) Microprocessors II

A study of a high performance microprocessor architecture, bus cycles, memory system design, DMA controller, hard disk drive, system bus, PC architecture and subsystems, PC programming assembly and C++.

Pre: EET 454 F

### 486 (3) Communications II

State-of-the-art in communication technology, RF/microwaves, transmission lines, applications, Mobile communications, cellular communications, satellite communications, optical fiber communications.

Pre: EET 456 F

### 487 (3) RF Systems Technology

Overview of wireless communication and control systems. Characterization and measurement of RF networks. Transmission lines. Antennas. Radio wave propagation. Fading. Smith Chart. RF transistor amplifiers, oscillators and mixer/modulator circuits. Klystrons, magnetrons and TWTs. Spread spectrum techniques. SAW matched filters.

Pre: EET 456 V

### 488 (1) Senior Project Design I

An individual design project performed in consultation with the instructor. Phase I includes the acceptance of

the proposal, defining, and limiting the project objectives, initial source contacts and procurement of materials.

Pre: EET 241, four 400-level EET courses F, S

### 489 (2) Senior Project Design II

Phase II includes completion of the project with evidence of extensive laboratory performance. A final oral report to the class and a standard formal written report are required.

Pre: EET 488 F, S

### 491 (1-4) In-Service

### 492 (4) Integrated Circuit Technology

Semiconductor industry and overview of integrated circuit manufacturing, integrated circuit types, crystal growth and wafer manufacturing, physics of semiconductor materials, detail of major IC fabrication steps, process yield, semiconductor devices and integrated circuit formation, packaging, and semiconductor measurements, introduction to layout tools.

Pre: EET 223 S

### 497 (1-6) Internship

Should be taken at end of junior year. Permission required.

Pre: 40 hrs EET creditor written permission of program coordinator F, S

499 (1-4) Individual Study F, S

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## Elementary Education

*College of Education*

*Department of Educational Studies: Elementary and Early Childhood*

328 Armstrong Hall • 507-389-1516

Chair: Peg Ballard

Ronald Browne, Terri Fogg, Linda Good, Marla Mastin, Karl Matz, Mary Ellen Pearson, Steven Reuter

The Department of Educational Studies: Elementary and Early Childhood has a major responsibility for providing professional education for early childhood and elementary teachers. The general goals of this program are to develop the dispositions, knowledge, and skills of candidates for licensure; to make available pre-professional clinical experiences in order to introduce students to the total school context; to provide the direct experience of classroom teaching under supervision; and to develop understanding of curriculum design in its theory and process of formulation. Emphasis shall be on the acquiring of knowledge, professional skills and learning environment awareness.

**Advising.** The College of Education serves Elementary Education students through developmentally appropriate levels of advising. Several small group advising sessions by level are offered each semester. Sessions are posted and announced in the *Reporter*, the Department Office, and Advising Office (117 Armstrong Hall).

*Level 100/First Year Students:* All students are assigned to the Student Relations Coordinator (SRC) during their first year. The SRC initially conducts the orientation programs and approves the first semester schedule. Stu-



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## Elementary Education

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dents during their first year then also have an identifiable location for immediate advising assistance (COE Academic Advising Office, directed by the SRC). Sessions focus on program expectations, general education, and an early clinical school experience.

**Level 200/Second Year Students:** Students are admitted to the major and assigned a Level 200 advisor in their program. Sessions focus on program expectations, prerequisite completion, second year service learning and diversity of clinical experiences and professional education admission.

**Level 300/Plan of Study:** Sessions focus on program expectations, sequential program blocking and specialty area licensure options.

**Level 400/Program Completion:** Students are eligible for level 400 sessions when a plan of study is complete and application for student teaching and graduation have been made. Sessions focus on program completion, application for graduation deficiencies and licensure application.

**Transfer Student Advising.** Formal evaluation of prior academic preparation follows transfer orientation. The Department Chairperson of Educational Studies: Elementary and Early Childhood formally approves the coursework based on course descriptions and syllabi, samples of completed work, and/or field experience evaluations.

**Admission to Major (117 Armstrong Hall).** All Early Childhood Education students must be admitted to the major and to Professional Education. All students must submit an unofficial MSU transcript. Transfer students should submit a copy of their transfer credit evaluation form, which is available from the Campus Access HUB.

All Elementary Education students must be admitted in the following sequence:

- Stage I Admission to the Major.
- Stage II Admission to Professional Education
- Stage III Admission to Elementary Education Block I
- Stage IV Admission to Student Teaching

### **STAGE I: Admission to the Major**

Coordinator for Admission to Major: Cheryl Kalakian (117 Armstrong Hall).

All students must submit an unofficial or official MSU transcript. Transfer students should submit a copy of their transfer credit evaluation form, which is available from the Campus Access HUB. Elementary Education students must complete the following requirements to be admitted to the Major:

1. Completion of 40 credits with a grade of A, B, or C.
2. Grade point average (GPA) of 2.5 overall on a 4 point system.
3. A or B in English 101.
4. A or B in Speech 101 or Speech 102.
5. A, B, or C in Math 110 or higher.

Applications are available in 117 Armstrong Hall.

Students who are not admitted may appeal.

### **STAGE II: Admission to Professional Education**

Coordinator for Admission to Professional Education: Cheryl Kalakian (117 Armstrong Hall).

All students working toward the teaching degree in the Elementary Education major must be admitted to Professional Education prior to enrollment in upper division coursework in professional education. Application to Professional Education should be made when the following requirements have been met:

1. Completion of 55 credits.
2. Cumulative GPA of 2.75.
3. Evidence of completion of the Pre-professional Skills Test (PPST).
4. Completion of Faculty Recommendation Folder.
5. Completion of a General Education Intensive Writing (General Education Category 1 C) course with an A or B.
6. Completion of the following courses: EEC 200 , EEC 222, and MATH 201.

Application deadline is 10 instructional days prior to upcoming registration. The Department's Admissions Committee will meet soon after the deadlines to determine admission for students.

Students who are not admitted may appeal.

### **STAGE III: Admission to Elementary Education Block I**

Coordinator for Admission to Elementary Education Block I:  
Department Chair 328 Armstrong Hall.

All students working toward the teaching degree in the Elementary Education Major must be admitted to Block I. Application to Block I should be made when the following requirements have been met:

1. Grade Point Average (GPA) of 2.75.
2. Completion of all General Education requirements.
3. Identification of the Specialty Area to be added to the Elementary Education license.

A handout (Elementary Education: Licensure Plan of Study) with the lists of General Education courses, the Professional Core Support courses, and the Specialty Areas is available in 117 Armstrong Hall.

Application deadline is 10 instructional days prior to upcoming registration. The Department's Admissions Committee will meet soon after the deadlines to determine admission for students.

Students who are not admitted may appeal.

The Elementary and Early Childhood program reserves the right to consider for admission students who have the potential to be excellent teachers and who have met some but not all the admission requirements.

### **STAGE IV: Admission to Student Teaching**

Coordinator for Admission to Student Teaching: Director of Clinical and Field Experiences 117 Armstrong Hall.

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## Elementary Education

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**Alternative Admission policy.** An alternative admission policy exists to encourage the participation of individuals from under-represented groups. The Student Relations Coordinator has the responsibility of hearing appeals for admission to the Professional Education program and may make exception to the published admission criteria.

**Teacher Licensure Coordinator: Gail Orcutt ( 118 Armstrong Hall)** The University recommends licensure to a state upon satisfactory completion of a licensure program. However, licensure does not occur automatically through graduation and the awarding of a diploma. Students need to make application for a Minnesota teaching license at the close of the term in which they graduate. The College of Education, 118 Armstrong Hall, coordinates the licensure process. In addition to meeting all program requirements, the PPST examination of skills in reading, writing, and mathematics needs to be successfully completed, as well as the Praxis II Pedagogy and/or content examination. Minnesota State Law requires that all candidates applying for initial licensure in this state be fingerprinted for national background checks. A conduct review statement will also need to be completed and signed. There are fees for the criminal background check and for the issuance of a State of Minnesota teaching license.

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### ELEMENTARY EDUCATION BS, TEACHING

The program below is designed to meet the Minnesota state licensure standards, which affect all graduates applying for licensure after September 1, 2001.

#### Required General Education (42 credits):

ENG	101	Composition (4)
BIOL	100	Our Natural World (Lab) (4)
ART	100	Elements and Principles of Art (3)
MATH	201	Elements of Math I (3)
PHYS	101	Introductory Physics (Lab) (3)
THEA	101	Acting for Everyone (3)
THEA	229	Kinetic Learning (3)
EEC	222	Human Relations and Cultural Diversity (3)
HLTH	310	Drug Education (3)

Choose one SPEE course from the following:

SPEE	100	Fundamentals of Speech Communication (3)
SPEE	102	Public Speaking (3)

Choose one course from the following:

HIST	190*	U.S. to 1877 (4)
HIST	191*	U.S. Since 1877 (4)
HIST	450	Minnesota to 1880 (3)
HIST	451	Minnesota Since 1880 (3)

\* HIST 190 or 191 may count for General Education and Support Course

#### Required Support Courses (Core, 18 credits):

BIOL	480	Biological Laboratory Experiences for Elementary Teachers (2)
PHYS	480	Laboratory Experiences in Physical Science (2)
GEOL	305	Earth and Space Systems (2)
MATH	202	Elements of Math II (3)

Choose one course from the following:

GEOG	340	United States (3)
GEOG	341	World Regional Geography (3)

Choose one course from the following:

KSP	412	Materials for Children (3)
ENG	325	Children's Literature (3)

#### Required for Major (Professional Education, 16 credits):

EEC	200	Intro to Elementary Teaching (3)
ART	421	Art Methods/Materials (2)
MUS	340	Music Materials/Methods (3)
HP	323	Elementary PE Methods (2)
KSP	301	Instructional Media Utilization (2)
EEC	333	Classroom Learning Theory (2)

#### BLOCK I- Literacy\*

##### Required for Major (Core, 10 credits):

EEC	320	Social Studies in Elementary (2)
EEC	321	Social Studies/Literacy Clinical (1)
EEC	334	Literacy Methods (4)
EEC	355	Curriculum, Management & Assessment (3)
EEC	410	Middle School Classroom (3)
EEC	370/371	Kindergarten Methods & Mat. (3)

\* Permission required for entry to Block I

#### BLOCK II- Inquiry\*

EEC	322	Science/Health in Elementary (3)
EEC	323	Science/Math Clinical (1)
EEC	324	Mathematics in Elementary (2)
EEC	407	Special Student in Regular Class (2)
EEC	421	Literacy Interventions
EEC	444	Behavior Management in Classroom (2)

\* Permission required for entry to Block II

#### BLOCK III

EEC	473	Student Teaching Elementary (8)
EEC	466	Pre-Kindergarten Student Teaching (6) <b>or</b>
EEC	494	Middle School Student Teaching (6)

#### CLINICAL EXPERIENCES

A major component of professional education coursework involves clinical experience in area schools. These experiences are graduated in expectation, time commitment, and skills practice. Multiple methods of assessment are used and evidence collected to provide a view of the clinical student's skills and abilities. These methods include direct observations of teaching activities by public school and University faculty, the use of videotaped lessons and activities for self-assessment, use of logs, participation in on-line activities, and participation in activities reflective of the professional responsibilities of teachers. The successful completion of each clinical experience is necessary for progression into future clinical activities (e.g., student teaching). All clinical placements are initiated by the Office of Clinical and Field Experience. Students involved in any clinical experience need to undergo a background study (once per academic year) to assess misdemeanor and felony conviction records maintained at the Minnesota Bureau of Criminal Apprehension. This information is provided to districts for their determination of suitability. The Office of Clinical and Field Experience coordinates the background check process.

## Elementary Education

### Student Teaching (119 Armstrong Hall) Director of Clinical and Field Experience: Tracy Pellet

Student teaching at Minnesota State University, Mankato is a result, oriented, performance-based, 16-week program, requiring the demonstration of an acceptable level of teaching performance. This performance is in the areas of planning and preparation, enhancing the learning environment, teaching for student learning, and professionalism. Multiple methods of assessment are used and evidence collected to provide a view of the student teacher's skills and abilities. These methods include direct observations of teaching activities by public school and University faculty, the use of videotaped lessons and activities for self-assessment, use of logs, participation in on-line activities, and participation in activities reflective of the professional responsibilities of teachers (e.g., parent conferences). The Director of Clinical and Field Experience requests placements for all student teachers in partner districts. Students teachers should not contact schools regarding their placement. Admission to the student teaching experience is contingent upon completion of a minimum of 95 semester credits, a cumulative grade point average of 2.75, grades of "C" or better for all program requirements, admittance to teacher/professional education, completion of all methods and professional education course work, completion and validation of formal application materials one semester in advance of student teaching semester (obtain specific dates from 119 Armstrong Hall), attendance at all preliminary student teaching meeting(s), submission of scores on the PRAXIS I (Reading/Writing/Math) test, recommendation of advisor, school district administration, cooperating teacher(s), and Director of Clinical and Field Experience, and completion of Minnesota State Police background check materials. Application materials are available in 119 Armstrong Hall.

### Required for Major (Specialty Area, 15-17 credits)

Select one of the following specialties:

#### Pre-Primary - Age 3 and above (15 credits):

EEC	368	Preprimary Methods & Materials (3)
EEC	369	Preprimary Methods & Materials Lab (1)
EEC	422	Emergent Literacy (2)
EEC	435	Teacher/Parent Relations (3)
MUS	441	Music in Early Childhood (2)
PSYC	433	Child Psychology (4)

#### Middle School Mathematics (15 credits):

EEC	342	Teach Sci/Tech/Soc in Middle School (2)
MATH	112	College Algebra (4)
MATH	181	Intuitive Calculus (3)
MATH	303	Elements of Mathematics (3)
STAT	154	Elementary Statistics (3)

#### Middle School Science (17 credits):

AST	101	Intro to Astronomy (3)
CHEM	201	General Chemistry I (5)
EEC	342	Teach Sci/Tech/Soc in Middle School (2)
GEOL	121	Physical Geology (4)
GEOL	310	Earth & Space Systems (3)

Note: Middle School Science Students do not take GEOL 305

#### Middle School Social Studies (15 credits):

ANTH	230	People: An Anthropological Perspective (3)
ECON	201	Principles of Macroeconomics (3)
EEC	342	Teach Sci/Tech/Soc in Middle School (2)
POL	111	US Government (3)
SOC	100	Social Problems (3)
		Elective Credits in Social Studies Area (1)

#### Middle School Communication Arts and Literature (15 credits):

EEC	428	Teaching Reading/Writing in the Content Area (3)
ENG	242	Intro to Creative Writing (3)
ENG	285	Practical Grammar (2)
ENG	425	Topics in Children's Literature (3)
ENG	464	Teaching Literature in Middle School (3)
		Elective Credits in Communication Arts and Literature (1)

#### Modern Language: French (15 credits):

##### Prerequisites:

1. French 101, 102, 201, 202 or equivalent.

Students may demonstrate their language proficiency level through coursework or through credit by examination. Credit by examination for French 101, 102, 201, and 202 can be arranged with a faculty member in the French program.

2. Students **must** demonstrate a level of Intermediate-Mid on the Proficiency Interview before they are admitted to FLES 462, 463. Contact the Department of Modern Languages or a member of the French faculty for details.

#### Required Language Courses: 11-12 credits

Language credits may be completed on the MSU campus or, in part, while on the MSU program in La Rochelle, France.

#### MSU Mankato Campus

302	Composition 1-3 credits
305	France Today 1-4 credits <b>or</b>
402	French Civilization 3-4 credits
323	French Phonetics and Applied Linguistics 1-3 credits
366	Oral Communication 1-3 credits

#### MSU in La Rochelle, France

315	Composition 1-3 credits
316	Conversation 1-3 credits
317	Modern France 1-3 credits

#### Required Methods: 4 credits

**FLES METHODS** 462 (3) and 463 Practicum (1) offered on MSU campus only.

#### Required Cultural Experience:

Students must demonstrate that they have had firsthand experience with the culture(s) represented by the French language. The La Rochelle program provides students with this firsthand experience. When study-abroad is not possible for students, Elementary Education students will need to conduct their practicum in a school setting and interact with a community that has a significant number of speakers of French.

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## Elementary Education

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**Students who complete the “Specialization” meet the MN BOT requirements for World Language Teachers in French at the K-8 level.**

**Modern Language: German (15 credits):**

**Prerequisites:**

1) German 101, 102, 201, 202 or equivalent. Students may demonstrate their language proficiency level through coursework or through credit by examination. Credit by exam for 101, 102, 201, 202 can be arranged with Birgitta Hendrickson, a faculty member in the German program.  
2) Students must demonstrate a level of Intermediate-Mid on the Proficiency Interview before they will be admitted to FLES 462, 463. Contact the Department of Modern Languages for details at 507-389-2116 or Birgitta Hendrickson at 389-2917.

**Required Language Courses: 11-12 credits**

Language credit may be completed on MSU campus or may be transferred from a study abroad experience with prior approval by the German program. The following courses are offered on the MSU campus.

GER 340 Topics in Language (1-4 credits)

GER 341 Composition and Conversation (4 credits)

GER 343 German Civilization (1-4 credits) or study abroad 300-level or above

**Required Methods, 4 credits:**

**FLES METHODS** 462 (3) and 463 Practicum (1) offered on MSU campus only.

OPI in German of Intermediate-Mid, required.

**Students who complete the “Specialization” meet the MN BOT requirements for World Language Teachers in German at the K-8 level.**

**Modern Language: Spanish (15 credits):**

**Prerequisites:**

1) Spanish 101, 102, 201, 202, or equivalent. Students may demonstrate their language proficiency level through coursework or through credit by examination. Credit by exam for 101, 102, 201, 202 is conducted one time each Fall and Spring semester. Contact the Department of Modern Languages for details at 507-389-2116.  
2) Students **must** demonstrate a level of Intermediate-Mid on the Proficiency Interview before they will be admitted to FLES 462, 463. Contact the Department of Modern Languages for details at 507-389-2116.

**Required Language Courses: 11-12 credits**

(Language credits may be completed on MSU campus or while on MSU program in Mexico).

**MSU Mankato campus**

310 Advanced Conversation and Composition (1-4)

356 Latin American Civilization (4)

365 Selected Readings (1-4)

**MSU in Mexico campus**

394 Supervised Study in Mexico: Advanced Spanish (1-6)  
494 Supervised Study in Mexico: Themes in Hispanic Culture (1-6)

494 Supervised Study in Mexico: Themes in Spanish American Literature (1-6)

**Required Methods, 4 credits:**

**FLES METHODS** 462 (3) and 463 Practicum (1) offered on MSU campus only.

**Required Cultural Experience:**

Students must demonstrate that they have had firsthand experience with the culture(s) represented by the target language. The Mexico program provides students with this firsthand experience. When study-abroad is not possible for the student, Elementary and Early Childhood students will need to conduct their practicum in a school setting **and** interact with a community that has a significant number of heritage speakers of Spanish.

**Students who complete the “Specialization” meet the MN BOT requirements for World Language Teachers in Spanish at the K-8 level.**

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### POLICIES/INFORMATION

**GPA Policy.** All coursework listed in the Elementary Education degree requires a cumulative career GPA of 2.75 and a grade of “C” or better. Students must achieve at least a 2.75 GPA in professional education courses and be admitted to Professional Education.

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### COURSE DESCRIPTIONS

Course descriptions with the following prefixes are listed in this section: Elementary and Early Childhood.

**092 (2) Reading Strategies**

This course is designed to assist students in the development of specific reading strategies necessary for success with the literacy demands of the university classroom and beyond. F, S

**200 (3) Early Clinical Experience: Elementary School**

A first course for elementary education majors. Experience in elementary classrooms, understanding children as learners, levels of instruction and the teaching role. F, S

**201 (2) Introduction to Early Childhood Education**

A first course for early childhood minors. Experience in pre-Kindergarten classrooms, understanding young learners, levels of instruction and the teaching role. F

**205 (3) Service-Learning: Society and the Environment**

**210 (1-4) Seminar**

An early course for elementary education majors. Exploration of the career field, introduction to the role of standards in education, overview of general methodology for the elementary classroom. V

**220 (1-4) Field Study**

This experience is designed jointly between student, advisor and a classroom teacher for the student to gain insight into the workings of the elementary classroom. V

**222 (3) Human Relations in a Multicultural Society**

Study of interpersonal skills, motivation and group skills. Applied to educational settings. Meets State of Minnesota human relations requirement for teacher licensure. F, S

## Elementary Education

### 230 (1-4) Individual Study

An experience/project designed by the student and advisor to provide for further study a topic or component within the realm of elementary education. Could be exploratory in nature. V

### 235 (1-4) Independent Study

Student directed learning; project jointly determined between student and advisor. V

### 240 (1-4) Research

An opportunity to truly research an area within elementary education to provide a more in depth understanding. V

### 250 (1-4) Internship

An opportunity to work in an elementary classroom under the direction of the classroom teacher. V

### 300 (1-4) Seminar: Children's Literature

Introduction to children's literature, both current and classic works. Exploration of authors, genres, and illustrations. Selection, evaluation, and use with K-6 children. V

### 301 (1-2) September School Experience

### 302 (1) Extended School Experience

### 303 (1) Classroom Methods

### 310 (1-4) Individual Study: Health for Elementary Teachers

The course is designed to prepare the elementary classroom teacher with methods and materials for teaching health. V

### 315 (1-4) Individual Study: Drug/Alcohol Education

This is a course jointly designed by the student and advisor to address the State of Minnesota requirements concerning drug/alcohol education for licensure. V

### 316 (1-4) Field Study: Math for Elementary Students

The purpose of this course is to prepare elementary level mathematics teachers to use appropriate content, materials, and methods in teaching. V

### 317 (1-4) Field Study: Math Grades 1-6

This course is designed to provide students with the necessary math content for successful math instruction in the elementary classroom. V

### 318 (1-4) Field Study: Math Grades 7-8

This course is designed to provide math content to assist the middle level math educator. V

### 320 (2) Social Studies in Elementary School

Selection and organization of content, materials, activities, procedures for the elementary classroom. To be taken concurrently with 321, 334, 355.

Pre: Admission to Professional Education, EEC 333.  
Coreq: EEC 321, 335, 355 F, S

### 321 (1) Social Studies/Literacy Clinical

Experiences in elementary classrooms.  
Coreq: EEC 320, 334, 355 F, S

### 322 (3) Science/Health in the Elementary School

Designed to help future teachers understand the role of science education in the school curriculum and to become familiar with some of the trends, issues and problems associated with it.

Pre: EEC 333, Coreq: EEC 323, 324 F, S

### 323 (1) Science/Health/Math Clinical

Science/health/math experience in elementary classrooms.  
Coreq: EEC 322, 324 F, S

### 324 (3) Teaching Elementary School Mathematics

To prepare elementary level mathematics teachers to use appropriate content, materials and methods in teaching.  
Pre: EEC 320, 333 F, S

### 330 (1-4) Individual Study: Social Studies in the Elementary School

This course is designed to prepare the elementary classroom teacher to select and organize content, materials, activities, procedures for effective instruction in the area of social studies. V

### 331 (1-4) Individual Study: History for Elementary Teachers

This course is designed to prepare the elementary classroom teacher with the necessary content to teach American History. V

### 332 (2) Developmental Reading

Principles and organization of the reading program. Instructional materials and procedures. This course does not meet requirement for elementary education. F

### 333 (2) Classroom Learning Theory

Focus on principles of psychology and techniques of learning-behavioristic, cognitive and humanistic. F, S

### 334 (4) Literacy Methods

Curriculum and methods for teaching literacy in elementary schools, K-6.

Pre: EEC 333; Coreq: EEC 320, 321, 355 F, S

### 336 (1-4) Individual Study: Geography for Elementary Teachers

This course is designed to prepare students with the necessary content knowledge to teach geography in the elementary classroom. V

### 340 (1-4) Research: Science Elementary Teaching

This course is designed to prepare the elementary classroom teacher to use appropriate content, materials, and methods in teaching. V

### 341 (1) Experiences in Biology for Elementary Teachers

This course is designed to provide students with a variety of experiences within the biological science realm to apply in the elementary classroom.

Pre: BIO 100 V

### 342 (2) Teaching Science, Technology, and Social Studies in the Middle School

Project-based interdisciplinary instruction infusing technology in middle school mathematics, social studies, and science classrooms. F, S



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## Elementary Education

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### **343 (1-4) Experiences in Physics Elementary for Teachers**

This course is designed to provide the student with a variety of experiences within the physical science realm to apply in the elementary classroom.

Pre: PHYS 101 V

### **350 (1-4) Internship: Trends/Issues in Education**

An opportunity to explore in an extended manner many of the current trends and issues within the elementary school setting to gain a more in-depth understanding. V

### **352 (2) Reading in the Middle School**

Development and definition of literacy in the middle school.

Pre: EEC 333 V

### **355 (2) Curriculum Management and Assessment**

Considerations of historical, theoretical and educational perspective on curriculum development and practice selecting, organizing and developing curriculum units and writing lesson plans. Managing the unique and developmental needs of the learner and group dynamics will be discussed. Emphasis on a variety of formal/informal strategies for assessment and student growth and learning.

Pre: EEC 333 Coreq: EEC 320, 321, 334, 355 F

### **400 (1-4) Seminar: Music Fundamentals**

To provide the background content necessary for the elementary classroom teacher. V

### **401 (1-4) Seminar: Music Elementary Teaching**

To provide the methods and materials necessary to teach music in the elementary classroom.

### **402 (3) Introduction to Teaching the LEP Student**

For teachers of students whose dominant language is other than English. V

### **404 (2) Curriculum: Applications of Technology in Education**

To prepare pre-service and in-service teachers to use technology in the elementary classroom. Applications to each content area will be considered. V

### **405 (1-4) Individual Studies: Art for Elementary Teachers**

This course is designed to provide necessary methods and materials for use in teaching art in the elementary classroom. V

### **407 (2) Special Education Learner in the Regular Classroom**

Provides elementary education majors with information and strategies including the special needs students in the regular classroom. F, S

### **410 (3) Philosophy and Practices in the Middle School**

The middle school concept, curriculum, and teaching methods.

Pre: EEC 333 F, S

### **414 (2-4) Diagnosis and Corrective Instruction in Elementary Mathematics**

Diagnostic teaching, evaluating deficiencies, skill analy-

sis, use of case studies and tools of diagnosis.

Pre: EEC 324 V

### **415 (1-4) Physical Education for Elementary Teachers**

This course is designed to prepare the elementary classroom teacher with methods and materials for teaching physical education. V

### **417 (3) Teaching Reading to ESL Students**

This course presents the theoretical base for the reading process, strategies for vocabulary development, and methods for content area learning as applied to second language learners. S

### **418 (2) Elementary School Science Activities**

Identification of appropriate science equipment, process skills, concepts and instructional attitudes for science in the elementary school.

Pre: EEC 322 V

### **420 (3) Reading Difficulties**

Foundation level of knowledge concerning the characteristics, causes, diagnosis and treatment of reading difficulties.

Pre: EEC 332 or 334 V

### **421 (2) Literacy Interventions**

Assessment and strategies for helping struggling readers and English language learners be successful with text. Provides strategies for assisting all students in comprehending content topics through reading and writing. F, S

### **422 (2) Emergent Literacy**

This course explores young children's (birth to age 8) development of literacy skills related to reading, writing, visual representation, speaking, listening, and viewing. The role of parents and early childhood learning environments are included. Observation, assessment, and strategies to promote emergent literacy are discussed. The use of appropriate children's literature is promoted. F, S

### **425 (1-4) Individual Study: Reading for Elementary**

This course is designed to prepare the elementary classroom teacher with the methods and materials for teaching reading to the K-6 student. V

### **426 (1-4) Research: Utilizing Media for Teaching**

This course is designed to prepare the elementary classroom teacher to use media effectively for instruction. V

### **428 (3) Teaching Reading and Writing in the Content Areas**

Presents strategies for teaching and reading knowledge, attitudes and skills in the various teaching content areas. F

### **430 (2) The Elementary Classroom**

Historical foundations, influencing factors, issues. Projects in curricular organization. Deals with educational values. Awareness of current elementary school issues.

Pre: Admission to Professional Education V

**435 (3) Teacher-Parent Relationships in Education**  
Emphasis on parent-teacher relationships for effective learning in children through the elementary grades. Includes Introduction to Early Childhood Family Education.  
F, S

**440 (4) Primary Grade Literacy**

**441 (1) Primary Grade Literacy: Lab**

**442 (4) Primary Grade Inquiry**

**443 (1) Primary Grade Inquiry: Lab**

**444 (2) Behavior Management in the Classroom**

**450 (1-4) Internship: Elementary Student Teaching**  
Student teaching in the elementary school including weekly seminar.  
V

**451 (2) Middle School Experience**

Middle school visitations, observations participation; understanding characteristics of students.  
V

**466 (6) Pre-Kindergarten Student Teaching and Seminar**

Student teaching with prekindergarten children; weekly seminar.  
Pre: EEC 365  
F, S

**471 (6) Kindergarten Student Teaching and Seminar**

Full responsibility of classroom with university supervision.  
Pre: EEC 370 and 473 or 474, and admission to student teaching  
F, S

**472 (11) Student Teaching: Moderately/Severely Mentally Handicapped**

Student teaching in special education. (TMH)  
Pre: Special Ed. Methods  
F, S

**473 (11-14) Student Teaching Elementary**

Student teaching in the elementary school including weekly seminar.  
Pre: Methods Courses; admission to student teaching  
Coreq: EEC 466, EEC 494  
F, S

**474 (6) Student Teaching Elementary**

To provide the experienced teacher an opportunity to use skills learned in previous experiences.  
Pre: Admission to student teaching  
F, S

**475 (3-6) Enrichment Experiences Elementary**

Student teaching projects determined jointly by student and advisor.  
Pre: EEC 474 or 473  
F, S

**478 (5) Supplementary Student Teaching Elementary**

Student teaching in the elementary school including weekly seminar for K-12 majors.  
Pre: Admission to student teaching  
Co: EEC 476 and EDFN 400  
F, S

**479 (11) Student Teaching Mildly/Moderately Mentally Handicapped**

Student teaching in special education. (EMH)  
Pre: Admission to student teaching  
F, S

**483 (2) Supervision of Student Teachers**

Assist K-12 classroom teachers in developing their skills for supervising pre-service and student teachers.  
V

**490 (1-3) Workshop**

The workshop format provides teachers and others opportunity to study a specific topic in a shortened, hands-on course.  
V

**491 (1-4) In-Service**

V

**493 (5) Student Teaching Middle School**

**494 (6) Student Teaching Middle School**

Student teaching in a second content area for a full-day, half-semester, in a middle school setting. For elementary students student teaching in middle school.  
Pre: EEC 473 or EEC 474  
F, S

**495 (2-4) Internship: Early Child Family Education**

Principals and practices in Early Childhood/Family Education and programs. On-site experiences are required.  
Pre: FCS 483, 488  
V

**496 (3-6) Internship**

To provide clinical experiences for pre-service teachers; to extend laboratory experiences for those who have completed pre-student teaching experiences.  
Pre: Required methods  
V

**497 (3-6) Reading Internship**

Student directed learning; project determined jointly between student and advisor.  
Pre: EEC 332 or 334, 420, 422 or 428  
V

**499 (1-4) Individual Study**

By contract between student and faculty member.  
V

## English

*College of Arts & Humanities*

*Department of English*

230 Armstrong Hall • 507-389-2117

Chair: Anne O'Meara

John Banschbach, Suzanne Bunkers, Donna Casella, Terry Davis, William Dyer, Tina Edstam, Terrance Flaherty, Gwen Griffin, Kathleen Hurley, Mary Susan Johnston, Donald F. Larsson, Nancy MacKenzie, JoAnna Mink, Roland Nord, Lisa Norris, David Popowski, Kay Puttock, Richard Robbins, Roger Sheffer, Louisa Smith, Harry Solo, Stephen Stoyhoff, Richard Terrill

The aims of the courses in English are fourfold: to cultivate accuracy and effectiveness in the use of the English language, both spoken and written; to suggest the satisfactions which may be experienced from contemplating a work of literary art; to gain experiences with masterpieces devoted to answering some of life's most important questions; and to help prepare students in professions requiring knowledge of the English language and literature. Writing is required in all courses so that the student

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## English

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may learn to write effectively and to practice the difficult but invaluable art of thinking a problem through.

The department's undergraduate programs prepare graduates for a wide variety of careers, including secondary English teaching, technical writing, editing, and publishing. A student with a strong background in literature, language and writing will be prepared to enter many other fields of study, including law, journalism, religion, business—in short, English is also the “pre-professional” major.

**Admission to Major** is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

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### ENGLISH BA

Choose one of the following options:

#### **LITERATURE OPTION (32 credits)**

##### **Required for Major (Core, 24-26 credits):**

ENG 275 Introduction to Literary Studies (4)

Choose three courses from the following:

ENG 320 British Literature to 1785 (4)

ENG 321 British Literature: 1785 to the Present (4)

ENG 327 American Literature to 1865 (4)

ENG 328 American Literature: 1865 to the Present (4)

Choose one course from the following:

ENG 416 Film Criticism (4)

ENG 441 Literary Criticism (4)

Choose one course from the following:

ENG 405 Shakespeare: Comedies and Histories (2)

ENG 406 Shakespeare: Tragedies (2)

Choose one course from the following:

ENG 331 World Literature: Ancient - Medieval (2)

ENG 332 World Literature: Renaissance-Contemporary (2)

ENG 435 The World Novel (2-4)

##### **Required Electives for Major (6-8 credits):**

Choose a minimum of 6 credits of 300-400 level

English courses (except 361, 362):

ENG xxx ENG xxx

3-4 credits from the following Humanities courses may be included as electives:

HUM 250 HUM 251 HUM 280

HUM 281 HUM 282 HUM 450

##### **Required for Bachelor of Arts (BA) degree ONLY:**

Language (8)

##### **Required Minor: Yes. Any.**

#### **WRITING OPTION (32 credits)**

##### **Required for Major (Core, 32 credits):**

ENG 448 Contemporary Literature (4)

Choose one of the following:

ENG 320 British Literature to 1785 (4)

ENG 321 British Literature: 1785 to Present (4)

Choose one of the following:

ENG 327 American Literature to 1865 (4)

ENG 328 American Literature: 1865 to the Present (4)

Choose a minimum of 4 credits from the following:

ENG 275 Introduction to Literary Studies (4)

ENG 381 Introduction to English Linguistics (4)

ENG 405 Shakespeare: Comedies and Histories (2)

ENG 406 Shakespeare: Tragedies (2)

ENG 416 Film Criticism (4)

ENG 441 Literary Criticism (4)

ENG 481 History of the English Language (4)

ENG 482 English Phonetics and Grammar for TESL (4)

ENG 485 Language and Culture in TESL (4)

Choose one course from the following:

ENG 340 Form and Technique in Prose (4)

ENG 341 Form and Technique in Poetry (4)

Choose 2 if primary genre is prose:

ENG 342 Creative Writing: Nonfiction (4)

ENG 343 Creative Writing: Fiction (4)

ENG 442 Advanced Prose Nonfiction Writing (4)

ENG 443 Advanced Fiction Writing (4)

ENG 445 Advanced Critical Writing (4)

ENG 446 Screenwriting (4)

Choose one if primary genre is prose:

ENG 344 Creative Writing: Poetry (4)

ENG 444 Advanced Poetry Writing (4)

Choose both if primary genre is poetry:

ENG 344 Creative Writing: Poetry (4)

ENG 444 Advanced Poetry Writing (4)

Choose one if primary genre is poetry:

ENG 342 Creative Writing: Nonfiction (4)

ENG 343 Creative Writing: Fiction (4)

ENG 442 Advanced Prose Nonfiction Writing (4)

ENG 443 Advanced Fiction Writing (4)

ENG 445 Advanced Critical Writing (4)

ENG 446 Screenwriting (4)

##### **Required for Bachelor of Arts (BA) degree ONLY:**

Language (8)

##### **Required Minor: Yes. Any.**

### ENGLISH BS

Choose one of the following options:

#### **GENERAL OPTION (34 credits)**

##### **Required for Major (Core, 16 credits):**

ENG 275 Introduction to Literary Studies (4)

Choose 3 courses from the following:

ENG 320 British Literature to 1785 (4)

ENG 321 British Literature: 1785 to Present (4)

ENG 327 American Literature to 1865 (4)

ENG 328 American Literature: 1865 to the Present (4)

##### **Required Electives for Major (18 credits):**

Choose 18 credits of English electives (exclusive of 361 and 362). Only four hours at the 100-level and four hours at the 200-level are allowed.

ENG xxx ENG xxx ENG xxx

ENG xxx ENG xxx ENG xxx

3-4 credits from the following humanities courses may be selected:

HUM 250 HUM 251 HUM 280

HUM 281 HUM 282 HUM 450

**Required Minor: Yes. Any.****WRITING OPTION (34 credits)****Required for Major (Core, 32 credits):**

ENG 275 Introduction to Literary Studies (4)

ENG 448 Contemporary Literature (4)

Choose one course from the following:

ENG 320 British Literature to 1785 (4)

ENG 321 British Literature: 1785 to Present (4)

Choose one course from the following:

ENG 327 American Literature to 1865 (4)

ENG 328 American Literature: 1865 to the Present (4)

Choose one course from the following:

ENG 340 Form and Technique in Prose (4)

ENG 341 Form and Technique in Poetry (4)

Choose two or more if primary genre is prose:

ENG 342 Creative Writing: Nonfiction (4)

ENG 343 Creative Writing: Fiction (4)

ENG 442 Advanced Prose Nonfiction Writing (4)

ENG 443 Advanced Fiction Writing (4)

ENG 445 Advanced Critical Writing (4)

ENG 446 Screenwriting (4)

Choose one or more if primary genre is prose:

ENG 344 Creative Writing: Poetry (4)

ENG 444 Advanced Poetry Writing (4)

Both are required if primary genre is poetry:

ENG 344 Creative Writing: Poetry (4)

ENG 444 Advanced Poetry Writing (4)

Choose one or more if primary genre is poetry:

ENG 342 Creative Writing: Nonfiction (4)

ENG 343 Creative Writing: Fiction (4)

ENG 442 Advanced Prose Nonfiction Writing (4)

ENG 443 Advanced Fiction Writing (4)

ENG 445 Advanced Critical Writing (4)

ENG 446 Screenwriting (4)

**Required Electives for Major (2 credits):**

Choose a minimum of 2 credits of 300/400 level English courses:

ENG xxx 300/400 level elective

**Required Minor: Yes. Any.****TECHNICAL WRITING OPTION (37 credits)****Required for Major (Core, 27-28 credits):**

ENG 271 Technical Communication (4)

ENG 474 Researching and Writing Technical Reports (4)

ENG 475 Editing Technical Publications (4)

ENG 477 Technical Documentation, Policies and Procedures (4)

ENG 498 Internship (3-4)

A minimum of 2 courses or 8 credits from the following:

ENG 471 Visual Technical Communication (4)

ENG 472 Topics in Technical Communication (4)

ENG 473 Desktop Publishing (4)

ENG 476 On-line Documentation (4)

ENG 478 Technical and Scientific Literature (4)

ENG 479 Rhetorical Theory Applied to Technical Documents (4)

ENG 494 English Workshop (1-6 credits)

**Required Electives for Major (9-10 credits):**

Choose an additional 3-7 credits from 300/400 level Tech Comm courses above. Choose an additional 3-7 credits from supporting areas such as computer science or educational technology.

**Required Minor: Yes. Technical.**

Several are recommended: Electronic Engineering Technology, Manufacturing Engineering Technology, Computer Science (choice of 3), Mathematics, Biology, Chemistry, Physics, Community Health, Sociology, Psychology or other approved on an individual basis.

**ENGLISH/SPEECH TEACHING OPTION:****ENGLISH CONCENTRATION BS (60 credits)****Required General Education Courses**

SPEE 102 Public Speaking (3)

MASS 110 Introduction to Mass Communication (3)

ENG xxx English Elective (4)

**Required for Major (English Core, 30-32 credits):**

ENG 275 Introduction to Literary Studies (4)

ENG 285 Practical Grammar (2)

ENG 361 Teaching English in the High School (2)

ENG 362 Teaching Literature and Writing (4)

ENG 381 Introduction to English Linguistics (4)

ENG 463 Adolescent Literature (2)

Choose one course from the following:

ENG 320 British Literature to 1785 (4)

ENG 321 British Literature: 1785 to Present (4)

Choose one course from the following:

ENG 327 American Literature to 1865 (4)

ENG 328 American Literature: 1865 to the Present (4)

Choose one course from the following:

ENG 331 World Literature: Ancient through Medieval (2)

ENG 332 World Literature: Renaissance through Contemporary (2)

ENG 435 The World Novel (2-4)

Choose one course from the following:

ENG 405 Shakespeare: Comedies and Histories (2)

ENG 406 Shakespeare: Tragedies (2)

**Required English Electives for Major (4-6 credits):**

Choose elective credits in English, with three credits required to be at the 3/400 level.

**Required for Major (Speech Core, 21 credits):**

SPEE 101 Interpersonal Communication (3)

SPEE 201 Small Group Communication (3)

SPEE 310 Performance of Literature (3)

SPEE 315 Effective Listening (3)

SPEE 321 Argumentation and Debate (3)

SPEE 404 Teaching of Speech Communication (3)

SPEE 430 Directing Forensic Activity (3)

**Required Speech Electives for Major (3 credits)**

Choose one course from the following:

SPEE 202 Nonverbal Communication (3)

SPEE 203 Intercultural Communication (3)

SPEE 220 Forensics (3)

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## English

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SPEE 333 Advanced Public Speaking (3)  
SPEE 403 Gender and Communication (3)

### **Required for Major (Professional Education, 30 credits):**

See the SECONDARY EDUCATION section for admission requirements to Professional Education and a list of required professional education courses.

**Required Minor: None.**

### **ENGLISH MINOR**

#### **GENERAL OPTION**

**Required Total: 16 credits**

**Required for Minor (Core, 12 credits):**

ENG 275 Introduction to Literary Studies (4)

Choose one course from the following:

ENG 320 British Literature to 1785 (4)

ENG 321 British Literature: 1785 to Present (4)

Choose one course from the following:

ENG 327 American Literature to 1865 (4)

ENG 328 American Literature: 1865 to the Present (4)

**Required Electives for Minor (4 credits):**

Choose a minimum of 4 credits in English courses:

Students may not select ENG 325, 361, 362, 463 or 464. None may be at the 100-level.

#### **WRITING OPTION**

**Required Total: 16 credits**

**Required for Minor (Core, 8 credits):**

Choose a minimum of 8 credits from the following courses:

ENG 242 ENG 342 ENG 343

ENG 344 ENG 442 ENG 443

ENG 444 ENG 445 ENG 446

ENG 494 may be chosen when topic is appropriate.

**Required Electives for Minor (8 credits):**

Choose an additional 8 credits from any 300/400 English courses (except ENG 361, 362, 470):

ENG xxx ENG xxx ENG xxx

### **LINGUISTICS MINOR**

**Required for Minor (Core, 16 credits):**

Choose 8-16 credits from the following:

ENG 358 ENG 381 ENG 481

ENG 482 ENG 485

ENG 494 or 495 may be chosen when topic is appropriate (see advisor).

Choose up to 8 credits from the following courses.

FREN 323 FREN 404 SPAN 301

SPAN 401 GER 405 CDIS 201

CDIS 212 CDIS 290 CDIS 292

CDIS 402/403 CDIS 438

### **TECHNICAL WRITING MINOR**

**Required for Minor (Core, 16 credits):**

ENG 271 Technical Communication (4)

ENG 475 Editing Technical Publications (4)

Choose two courses from the following:

ENG 472 ENG 471 ENG 474

ENG 476 ENG 477 ENG 478

ENG 479

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## **POLICIES/INFORMATION**

**GPA Policy.** Candidates for the major degrees in the department must maintain a 2.5 grade-point average in all coursework in the major field, in addition to the 2.0 overall average required by the university for graduation. Students must earn a C or better for a course to apply to their major or minor.

**P/N Grading Policy.** Courses leading to a major or minor in English may not be taken on a P/N basis, except where P/N is mandatory.

ENG 101 should be completed during the freshman year.

**Supporting Coursework.** It is advisable for English majors to be acquainted with a foreign language, especially so for students who plan to do graduate work in English. One or more courses in British or American history are desirable.

Most English teachers are responsible for directing some extracurricular activity; consequently, the English major with experience and training in one or more of these activities in college (e.g., dramatics, forensics, journalism) will make a stronger candidate for teacher positions.

**Honors Reading.** In order to provide broad preparation for graduate study, English majors of superior ability may read for honors in eight different areas. See ENG 350-358. To be eligible, a student must have completed at least 15 credits of English courses and earned a grade-point average of 3.5 in English. Usually the student will enroll for no more than two honors courses a semester. Honors credits may be counted as electives for an English major. Students who successfully complete at least five of these courses with a grade-point average of 3.5 for all English courses (and who have met the other degree requirements) will be eligible for graduation "with distinction in English."

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## **COURSE DESCRIPTIONS**

### **100 (4) Basic Writing**

A remedial writing course that progresses from the personal writing to writing about readings and the use of sources.

### **101 (4) Composition**

Students will practice strategies for generating and developing ideas, locating and analyzing information, analyzing audience, drafting, writing sentences and paragraphs, evaluating drafts, revising, and editing in essays of varying lengths.

### **110 (4) Introduction to Literature**

Study and analysis of elements of prose, poetry and drama in English from earlier periods through contemporary. Emphasizes critical reading of literature. May include



such genres as short story, novel, memoir, nonfiction, biography, autobiography, poem, play, screenplay.

#### **112 (4) Introduction to Poetry and Drama**

Study and analysis of elements of poetic and dramatic literature in English, including translations, from earlier periods through contemporary. Emphasizes critical reading of and writing about literature.

Pre: ENG 101

#### **113 (4) Introduction to Prose Literature**

Study and analysis of prose literature in English from earlier periods through contemporary. Works will be chosen from the following forms: short stories, essays, novellas, novels, memoirs, autobiographies, and other long forms. Emphasizes critical reading of and writing about literature.

Pre: ENG 101

#### **114 (4) Introduction to Film**

Study and analysis of the elements basic to a critical understanding of film: story elements; visual design; cinematography and color; editing and special effects; functions of sound and music; styles of acting and directing; and functions of genre and social beliefs.

#### **211 (4) Perspectives: Human Diversity and Literature/Film**

Courses will explore various specialized topics in literature and/or film to increase understanding of literary and cinematic contributions made by under-represented peoples, to develop critical thinking, reading, and writing skills, and to increase appreciation of the diversity of human experience. Typical courses include: Multicultural Literature, Women's Literature. May be repeated as topics change.

Pre: ENG 101

#### **212 (4) Perspectives: World Literature/Film**

Courses will introduce students to works of literature and/or film from a variety of world cultures. Designed to increase knowledge of world cultures and appreciation and understanding of cultural differences in representation, and in seeing, believing, and being. Emphasizes critical thinking, reading, and writing.

Pre: ENG 101

#### **213 (4) Perspectives: Ethics and Civic Responsibility in Literature/Film**

Courses will focus on some characteristic ways in which literature and/or film address and explore the ethical dimensions of citizenship and the relationships between works and their cultural contexts. Emphasizes critical thinking, reading and writing. Typical courses include: War and Peace; Utopias and Dystopias. May be repeated as topics change.

Pre: ENG 101

#### **214 (1-4) Perspectives in Literature/Film**

Courses will explore various specialized topics in literature and/or film. May be repeated as topics change.

#### **215 (1-3) Topics**

Varied topics in literature and film. May be repeated as topics change.

#### **242 (3) Introduction to Creative Writing**

An introduction to writing poetry and short fiction. This course does not assume previous creative writing experience on the part of the student.

#### **270 (4) Advanced Composition**

Continued practice in expository writing with emphasis on further development of style and organization.

Pre: ENG 101

#### **271 (4) Technical Communication**

Introduction to learning the written and oral communication of technical information. Assignments include writing and presenting proposals, reports, and documentation. Emphasis on use of rhetorical analysis, computer applications, collaborative writing, and usability testing to complete technical communication tasks in the workplace.

Pre: ENG 101

#### **275 (4) Introduction to Literary Studies**

An introduction to literary genre and to the techniques of writing about literature.

Pre: ENG 101

#### **285 (2) Practical Grammar**

A review of traditional grammar designed to prepare students for advanced work in language and grammar. This course will run for a half-semester.

#### **318 (2-4) Selected Studies in Multicultural Literature**

Specific topics in multicultural literature with detailed study of a particular period, region, or group in the United States and their contributions to a diverse literature. Topics include African American Literature, American Indian Literature, Southern Writers of Color, and others. May be repeated as topics change.

#### **320 (4) British Literature to 1785**

Representative works from British literature encompassing Beowulf through the Eighteenth Century.

Pre or Coreq: ENG 275

F

#### **321 (4) British Literature: 1785 to Present**

Representative works from British Literature, the Romantic Period to the present.

Pre or Coreq: ENG 275

S

#### **325 (3) Children's Literature**

Introduction to authors, genres, illustrations, and works of literature published for elementary age children. Current and classic works.

#### **327 (4) American Literature to 1865**

A survey of American Literature from its beginnings to the end of the Civil War.

Pre or Coreq: ENG 275

F

#### **328 (4) American Literature: 1865 to the Present**

A survey of American Literature from the end of the Civil War to the present.

Pre or Coreq: ENG 275

S

## English

### 331 (2) World Literature: Ancient through Medieval

A survey of literature from a variety of world cultures from ancient through medieval times, with an emphasis on the epic genre and the cultural myths it carries. The course will run for a half-semester.

Pre or Coreq: ENG 275

F

### 332 (2) World Literature: Renaissance through Contemporary

A survey of literature from a variety of world cultures from renaissance through contemporary times, with an emphasis on the epic genre and the cultural myths it carries. The course will run for a half-semester.

Pre or Coreq: ENG 275

F

### 340 (4) Form and Technique in Prose

Study of the technical underpinnings of fiction and non-fiction genres.

ALT-F

### 341 (4) Form and Technique in Poetry

Study of the technical underpinnings of poetry.

ALT-F

### 342 (4) Creative Writing: Nonfiction

Introduction to writing personal essays and literary journalism.

### 343 (4) Creative Writing: Fiction

Introduction to writing short stories.

S

### 344 (4) Creative Writing: Poetry

Introduction to writing poems.

F

### 350 (1) Reading for Honors

Medieval and Sixteenth Century English Literature. Consent required.

### 351 (1) Reading for Honors

17th Century English Literature. Consent required.

### 352 (1) Reading for Honors

18th Century English Literature. Consent required.

### 353 (1) Reading for Honors

Nineteenth Century English Literature. Consent required.

### 354 (1) Reading for Honors

Nineteenth Century American Literature. Consent required.

### 355 (1) Reading for Honors

Twentieth Century English and American Literature. Consent required.

### 356 (1) Reading for Honors

Literature in translation, from any period, any language. Consent required.

### 358 (1) Reading for Honors

Linguistics. Consent required.

### 361 (2) Teaching English in the High School

Methods of and materials for teaching English in the 7-12 language arts curriculum, with emphasis on curriculum, especially the new state curriculum assessment package, lesson and unit plans, clinical experience, professional issues and responsibilities.

S

### 362 (4) Teaching Literature and Writing

Methods of and materials for teaching writing and litera-

ture (fiction, nonfiction, poetry) in the 7-12 language arts curriculum. Emphasis on computer assisted writing, computer assisted research, and assessment.

F

### 381 (4) Introduction to English Linguistics

The English language considered structurally (phonology, morphology, syntax, semantics) and sociolinguistically (geographical and social dialects, gender issues, acquisition of first and second language, standard and nonstandard forms).

F

### 400 (4) Chaucer

Readings in the major works of Chaucer, including *The Canterbury Tales* and *Troilus and Criseyde*.

### 401 (4) Milton

A study of Milton's development as a poet and prose writer, from his minor poetry to *Paradise Lost*, *Paradise Regained*, *Samson Agonistes*, *Areopagitica*, and selections from *On Christian Doctrine*.

### 402 (2-4) Women in Literature

Selected topics course on literature by and about women.

### 403 (2-4) Selected Authors

Content changes. May be repeated.

### 405 (2) Shakespeare: Comedies and Histories

A study of Shakespeare's comedies and histories. This course will run for a half-semester.

S

### 406 (2) Shakespeare: Tragedies

A study of Shakespeare's tragedies. This course will run for a half-semester.

S

### 416 (4) Film Criticism

Trends in film theory and criticism. Practice in critical analysis and reviews.

ALT-F

### 425 (2-4) Topics in Children's Literature

Topics have included genres such as fantasy or historical fiction and thematic topics such as survival or journeys.

F

### 426 (2-4) Selected Periods

Selected periods of literary study.

### 430 (1-3) Independent Reading

Extensive reading in an area for which the student has had basic preparation. Consent required.

### 432 (2-4) Selected Studies in the Novel

Content changes. May be repeated.

### 435 (2-4) The World Novel

A study of selected novels from a variety of time periods and cultures, including Eastern and Western Europe, Asia, Africa, and Latin America.

S

### 441 (4) Literary Criticism

Theories of literature and its production and use.

Pre: 6 semester credits in literature

ALT-S

### 442 (4) Advanced Prose Nonfiction Writing

Advanced workshop in writing personal essays and literary journalism. May be repeated.

Pre: Writing course or consent

ALT-F

**443 (4) Advanced Fiction Writing**

An advanced course in writing short stories and novels. May be repeated.

Pre: Writing course or consent ALT-S

**444 (4) Advanced Poetry Writing**

An advanced course in writing poems. May be repeated.

Pre: Writing course or consent ALT-S

**445 (4) Advanced Critical Writing**

An advanced course in writing critical essays. May be repeated.

Pre: Writing course or consent V

**446 (4) Screenwriting**

Introduction to writing for the screen. May be repeated.

Pre: Writing course or consent S

**448 (4) Contemporary Literature**

Selected works of fiction, nonfiction, and poetry since 1945. S

**463 (2) Adolescent Literature**

Motivation and interests of and materials for adolescent readers. This course will run a half-semester. F

**464 (3) Teaching Literature in the Middle School**

Survey of books suitable for the Middle School classroom, covering a variety of topics and genres. S

**470 (1-3) Independent Writing**

Writing in an area and of a type for which the student has demonstrated ability. May be repeated. Consent required.

**471 (4) Visual Technical Communication**

This course provides analysis and training focused on concepts and practices of visual design as they relate to technical and professional communication.

**472 (4) Topics in Technical Communication**

Overview of technical communication theory with emphasis on contemporary approaches. Hands-on workshop which implements the theories discussed. F

**473 (4) Desktop Publishing**

Brief history of publishing and typography, conventions of desktop publishing, and hardware and software application tools for desktop publishing. Students need not have prior experience with DTP, but some word processing and microcomputer experience will be helpful.

**474 (4) Researching and Writing Technical Reports**

Practice in writing various types of reports for a variety of purposes and audiences. Includes primary and secondary research methods, and data analysis of information to be used in reports.

Pre: ENG 271 or equivalent S

**475 (4) Editing Technical Publications**

Editing the content, organization, format, style, and mechanics of documents, managing the production cycle of documents, and discovering and learning microcomputer and software applications for technical editing tasks. S

**476 (4) On-line Documentation**

This course serves as an introduction to the conventions and strategies for publishing on-line documentation and

for managing on-line documentation projects. Topics will include: 1. analyzing users and tasks; 2. designing and writing documents to be published on-line; 3. testing on-line documents; and 4. managing on-line documentation projects.

**477 (4) Technical Documentation, Policies, and Procedures**

Creating both on-line and print documentation for products, with emphasis on computer software and hardware documentation for users. Attention also to policies and procedures as written for a range of uses (e.g., employee handbooks, manufacturing processes, usability testing). F

**478 (4) Technical and Scientific Literature**

Reading and analysis of stories, novels, poems, essays, and nonfiction accounts that deal with scientific and technological topics. Focus on the role of technology in communication forms and tools. ALT-F

**479 (4) Rhetorical Theory Applied to Technical Documents**

Overview of prominent rhetorical theories, from classical to contemporary, which are applicable to technical communication. Practical application and implications of the theories emphasized. Additional attention given to current issues such as risk communication and ethics. ALT-S

**481 (4) History of the English Language**

The development of English from its origins as a dialect of Proto-Indo-European to its current form, with consideration of its social history as well as its formal development.

**482 (4) English Phonetics and Grammar for TESL**

The English sound system and English sentence structure studied for the purpose of discovering how they can be taught to students of English as a second or foreign language. F

**485 (4) Language and Culture in TESL**

A consideration of the cultural issues encountered by teachers of English as a second or foreign language in the US and abroad. S

**492 (2-4) Selected Topics**

Various topic-oriented courses in literature.

**494 (1-6) English Workshop**

Specialized workshops in topics such as computer assisted writing, teaching the writing of poetry in the secondary school, or discipline specific writing.

**495 (1-4) Special Studies**

Specialized, in-depth study of topics such as Holocaust literature, environmental literature, or regional literature.

**498 (1-6) Internship**

Students gain experience in technical communication by working on site for corporations, institutions, or nonprofit organizations performing technical communication duties.

**499 (1-4) Individual Study**

Extensive reading and writing in an area for which the student has had basic preparation. Consent required.

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## English As A Second Language

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### English As A Second Language

*College of Arts & Humanities*  
*Department of Modern Languages*  
227 Armstrong Hall • 507-389-2116

Chair: Kimberly Contag

Tina Edstam, Patricia Wilcox Peterson, Steve Stoyhoff

Courses in English as a second language (ESL) are intended to help international students and other students who are non-native speakers of English at Minnesota State University, Mankato. These courses are advanced level second language courses which prepare students to meet the language demands of academic study. Placement into the ESL program occurs at the beginning of each semester for newly admitted students, including students who have transferred to Minnesota State University, Mankato from other institutions. International students must register for and complete any required ESL courses during their first semester of study in Mankato. Specific information regarding the testing and placement process may be secured from the office of the Department of Modern Languages and also from the International Student Office.

Students interested in teaching English as a second language should see the Teaching English as a Second Language (TESL) section of this bulletin.

#### POLICIES/INFORMATION

**GPA Policy.** A grade of "P" must be earned in order for the student to fulfill the ESL requirement.

**P/N Grading Policy.** All ESL courses are offered on a P/N basis only.

#### COURSE DESCRIPTIONS

##### **101 (4) Advanced Academic English for Non-Native Speakers (Pretesting required before enrolling)**

Listening to academic lectures, taking notes, reading textbook material, summarizing and relating information from various sources. Study skills, writing answers to essay questions, and practice giving oral presentations.

F, S

##### **201 (4) Advanced Composition for Non-Native Speakers I (Pretesting required before enrolling)**

Grammar topics on the sentence level, sentence combining, and discourse structures. Writing skills include paraphrase, paragraph organization, library work, editing and revising.

F

##### **202 (4) Advanced Composition for Non-Native Speakers II (Pretesting required before enrolling)**

Same as ESL 201, with further work in writing as a way to process information.

F, S

### Environmental Sciences

*College of Science, Engineering & Technology*  
*Department of Biological Sciences*  
242 Trafton Science Center S • 507-389-2786  
Web site: [www.mnsu.edu/dept/biology](http://www.mnsu.edu/dept/biology)

Program Coordinator: Beth Proctor, Ph.D.  
507-389-5697

Environmental science is an applied science designed to study those factors that impact our environment. Major areas of environmental concern include, but are not limited to, water (surface and ground water) quality, air quality, and solid and hazardous waste issues. This program is designed to encourage students to use the resources of all the colleges of Minnesota State University, Mankato. The program is oriented toward developing the individual for leadership positions in industry, government, and public concern groups, as well as providing a foundation for individual community involvement as an informed citizen.

**Admission to Major** is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

#### ENVIRONMENTAL SCIENCE MAJOR BS

There are two different ways to earn a BS degree in Environmental Sciences.

##### **OPTION I: COMPLETION OF TWO MAJORS**

###### **Required General Education (8 credits):**

BIOL	105	General Biology I (4)
MATH	112	College Algebra (4)

###### **Required for Major (Core, 28-32 credits):**

BIOL	215	General Ecology (4)
BIOL	410	Human Ecology (3)
ENVR	440	Environmental Regulations (3)
ENVR	450	Environmental Pollution and Control (3)
ENVR	460	Analysis of Pollutants (4)
ENVR	498	Internship/Research (1-3)

Choose **one** of the following:

BIOL	217	Plant Science (4)
BIOL	316	Animal Diversity (3)
BIOL	412	Soil Ecology (4)

Plus two 300-400 level courses from **one** of the following emphases in Biology:

Aquatic Ecology, Terrestrial Ecology, Plant Sciences, Toxicology, Microbiology, or Techniques.

**Note:** Courses in these emphases require BIOL 105 and BIOL 106 as prerequisites.

###### **Required for Major (Elective Option):**

###### **Elective Option A (6-8 credits, second major in a science):**

1. Two 300-400 level courses from one of the following areas: Geography, Political Science, Urban and Regional Studies, Business, or Economics.

## Environmental Sciences

2. Electives may be taken from the 300-400 level that are compatible with Environmental Sciences Major. A maximum of **15 credits** from one major can be used in the second major.

**Elective Option B (8-10 credits, second major in a non-science):**

1. Complete **one** of the following Chemistry sequences:  
CHEM 105 **and** CHEM 111 **or**  
CHEM 201 **and** CHEM 202

2. Electives from the 300-400 level that are compatible with Environmental Sciences Major. A maximum of 15 credits from one major can be used in the second major.

**Required Minor: None.**

### **OPTION II: COMPLETION OF MAJOR PLUS 2 MINORS**

**Required for Major (Core, 28-32 credits):**

See requirements under Option I.

**Required for Major (Chemistry, 8-10 credits):**

Choose **one** of the following sets to complete one year of Chemistry:

CHEM 105 **and** CHEM 111 **or**  
CHEM 201 **and** CHEM 202

**Required (Two Minors):**

**Select two minors from the following:** Anthropology, Business Administration, Chemistry, Community Health, Computer Science, Economics, Geography, Geology, International Business, Law Enforcement, Mass Communication, Physics, Political Science, Technical Writing, Urban & Regional Studies

### **ENVIRONMENTAL SCIENCE MINOR**

**Required for Minor (Core, 21 credits):**

BIOL	101	Perspectives in Environmental Science (4)
BIOL	215	General Ecology (4)
ENVR	440	Environmental Regulations (3)
ENVR	450	Environmental Pollution and Control (3)

#### **OPTION A: SCIENCE MAJOR**

ENVR	460	Analysis of Pollutants (4)
BIOL	410	Human Ecology (3)

#### **OPTION B: NON-SCIENCE MAJOR**

Choose **one** set of CHEMISTRY courses from the following:

CHEM	105	<b>and</b>	CHEM	111	<b>or</b>
CHEM	201	<b>and</b>	CHEM	202	

### **POLICIES/INFORMATION**

**P/N Grading Policy.** All courses leading to a major or a minor in environmental sciences must be taken for letter grades.

Refer to the College regarding required advising for students on academic probation.

**GPA Policy.** A minimum grade of "C" is required in all

courses applied to the Environmental Sciences B.S. degree.

Several scholarships in the Department of Biological Sciences are available for entering freshmen and currently enrolled MSU students who meet the requirements. Application deadline is March 1 of each year.

### **COURSE DESCRIPTIONS**

#### **101 (4) Perspectives in Environmental Science**

This course is designed to introduce students to the complex field of environmental science. Reading assignments, lectures, discussions and other class assignments will introduce students to the structure and functions of ecosystems, the concept of sustainability, issues in environmental protection with an emphasis on global commons, the interrelationships between environment, culture, government and economics and what individuals or groups can do to influence environmental policy/rules. F, S

#### **440 (3) Environmental Regulations**

This is a lecture course introducing students to major federal environmental laws and regulations. Discussions include the cause(s) that prompted the enactment of various environmental legislation as well as intent and implementation of the legislation. Both Federal and State of MN environmental statutes will be discussed. F

#### **450 (3) Environmental Pollution and Control**

This is a lecture course that introduces students to sources and controls for pollutants in air, water, and soils including hazardous waste. Chemical and biological mechanisms that are important in nature and used to control/treat various types of pollutants are emphasized.

Pre: 1 year CHEM

F

#### **460 (4) Analysis of Pollutants**

The purpose of this lecture/lab class is to introduce students to standard practices and procedures used in sampling and analysis of environmental matrices and to develop an environmental research project. Standard quality control/quality assurance procedures per EPA are emphasized. S

#### **480 (1-6) Senior Research**

Participate in an independent research project with advisory support and with a focus on the student's career objectives. F, S

#### **483 (1-2) Environmental Science Seminar**

A seminar course that involves a critical evaluation of an area in Environmental Science. Topics vary from year to year. Students are usually required to make a presentation to the class. ALT

#### **491 (1-2) In-Service**

F, S

#### **498 (1-6) Internship**

Only three credits can be counted toward major. Experience in applied Environmental Sciences according to a prearranged training program. F, S

#### **499 (1-6) Individual Study**

Individual Research Project.

F, S



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## Ethnic Studies

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### Ethnic Studies

*College of Social & Behavioral Sciences*

*Department of Ethnic Studies*

109 Morris Hall • 507-389-2798

Fax 507-389-6377

Web site: [www.mnsu.edu/dept/ethnic](http://www.mnsu.edu/dept/ethnic)

Chair: Yueh-Ting Lee

Wayne Allen, Hanh Huy Phan, Joann Quinones-Perdomo, Simboonath Singh

The Department of Ethnic Studies (ES), an interdisciplinary program, is academically committed to promoting multicultural and ethnic knowledge, skills and values both within and outside the United States and to preparing our students for effective functioning across the culturally diverse and global community. A major in ethnic studies gives students exposure to and understanding of those historical, economic, social and political forces which have contoured the cross-cultural and ethnic experience in and outside the United States. This program prepares the students to cope with social injustice (e.g., racism, discrimination, social conflict) effectively and also aims to provide students with multicultural/ethnic knowledge, multicultural/ethnic values and skills (e.g., cultural competency skills and other professional skills) so that ES majors will be academically strong and competitive on the market. ES majors must take both ES core courses and skill-oriented or applied courses that will focus on one of the following areas—Governmental/Public Area, Business/Corporate Area, Community/Human Services Area, and Extended Program courses.

**Admission to Major.** Students enrolling in 300-400 level courses must be admitted to the program. Admission to Major is granted by the department. Minimum University admission requirements are:  
- a minimum of 32 earned semester credit hours.  
- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

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#### ETHNIC STUDIES BS

##### **Required General Education Courses (3 credits):**

##### **One introductory course (Prerequisite to ES major)**

ETHN 100 American Racial Minorities (3) **or**

ETHN 101 Introduction to Ethnic Studies (3)

(Instructor in the upper level course could waive this requirement, though ETHN 100 or 101 should be a prerequisite for upper-level courses in Ethnic Studies)

##### **Required for Major (Core 6 credits):**

One Research Method/Skills Course

ETHN 401/ANTH 431 Applied Cultural Research (3)  
**or**

ETHN 402 Ethnic Research Method/Skills (3)

##### **One Critical Thinking/Theoretical Course:**

ETHN 400 Cultural Pluralism (3) **or**

ETHN 410 Foundations of Oppression (3)

##### **Required Electives (15 credits):**

##### **Two of the following courses:**

ETHN 110 Introduction to African American Studies (3)

ETHN 120 Introduction to American Indian Studies (3)

ETHN 130 Introduction to Asian American Studies (3)

ETHN 140 Introduction to Latino/Hispanic Studies (3)

##### **Three ES electives, two must be 4XX level courses from the suggested list below:**

ETHN 150 Multi-Cultural/Ethnic Experience (3)

ETHN 200 Interracial/Ethnic Dating/Marriage (3)

ETHN 220 Civil Rights in the U.S. (3)

ETHN 240 Rural Studies (3)

ETHN 295 Selected Topics (1-4)

ETHN 296 Workshop: TBA (1-3)

ETHN 300 American Indian Leaders (3)

ETHN 420 African American Studies (3)

ETHN 430 American Indian Studies (3)

ETHN 440 Asian American Studies (3)

ETHN 450 Latino/Hispanic Studies (3)

ETHN 460 Urban Minority Problems (3)

ETHN 470 Women of Color (3)

ETHN 480 Social Justice in Ethnicity and Gender (3)

ETHN 486 Racial and Ethnic Politics (3)

ETHN 495 Selected Topics (3)

ETHN 496 Workshop: TBA (1-3)

##### **Required for Major (Options 15 credits):**

##### **PUBLIC/GOVERNMENT CONCENTRATION**

##### **Choose from:**

SOC 100 Social Problems (3)

URBS 100 Introduction to the City (3) **or**

URBS 415 Urban Housing Policy (3)

POL 101 Introduction to Public Life (3)

POL 111 United States Government (3)

ECON 201 Principles of Macroeconomics (3)

LAWE 234 Policing in a Diverse Society (3)

POL 260 Introduction to Public Administration (3)

POL 361 Public Budgeting (3)

SOC 417 Program Administration (3)

ETHN 497 Internship will be optional (3)

(The courses in the category above are related to public and governmental settings. Students who focus on this category are strongly encouraged to minor in Political Science, Law Enforcement, or Urban Studies or in other social sciences.)

##### **BUSINESS/CORPORATE CONCENTRATION**

##### **Choose from:**

MRKT 100 Global Business Concepts (3)

MRKT 310 Principles of Marketing (3)

MGMT 330 Principles of Management (3)

IBUS 380 Principles of International Business (3)

GEOG 425 Economic Geography (3)

MGMT 440 Human Resource Management (3)

MGMT 445 Training and Development (3)

PSYC 463 Survey of Industrial and Organizational Psychology (3)

ETHN 497 Internship will be optional (3)

(The courses in the category above are related to the business and corporate settings. Students who focus on this category are strongly encouraged to minor in marketing, human resource management, international business or in other business related areas.)

## Ethnic Studies

### LOCAL COMMUNITY AND HUMAN SERVICES

#### Choose from:

PSYC	101	Introduction to Psychology (3)
WOST	120	Violence and Prevention Education (3)
SOWK	190	Social Welfare Services (3) <b>or</b>
SOWK	210	Introduction to Social Work (3)
GERO	200	Aging: An Interdisciplinary (3) Perspective (3)
KSP	235	Human Development (3)
PSYC	438	Community Psychology (3)
HLTH	455	Health and Aging (or an age-related course) (3)
CSP	471	Interpersonal Helping Skills (3)
URBS	230	Community Leadership and Service Learning (3)
ETHN	497	Internship will be optional (3)

(The courses in the category above are related to the local community and human services. Students who focus on this category are strongly encouraged to minor in gerontology, psychology, social work, counseling/education or in other community services related areas.)

### INTERNATIONAL COMMUNITY AND HUMAN SERVICES

#### Choose from:

POL	106	Politics in the World Community (3) <b>or</b>
POL	231	World Politics (3)
POL	448	Political Development and Change (3)
POL	431	International Relations (3)
IBUS	380	Principles of International Business (3) <b>or</b>
POL	431	International Relations (3)
IBUS	380	Principles of International Business (3)
HIST	171	World Civilization (3)
GEOG	341	World Regional Geography (3)
SOWK	255	Global Perspective in Human Needs (3)
URBS	150	Sustainable Communities (3)
ANTH	421	Health, Cultural and Disease (3)
PSYC	457	Cross-Cultural Psychology (3) <b>or</b>
SPEE	203	Intercultural Communication (3)
XXXX		One of Western Languages (e.g., German, Spanish, German) (3)
XXXX		One of Eastern Languages (e.g., Asia/ Middle East or Africa) (3)
ETHN	497	Internship will be optional (3)

(The courses in the category above are related to the global community and human services. Students who focus on this category are strongly encouraged to minor in international relations or any foreign languages or in other world community services related areas.)

### EXTENDED PROGRAM COURSES

#### (SUBJECT TO AGREEMENT)

**One computer skills course or quantitative/ statistical skills course (3)**

**Four multicultural electives are to be taken within or outside ES department but subject to the approval of ES advisors.\***

\* [Example of multicultural electives outside the ES Department may include but are not limited to: the curricula of social/behavioral sciences, arts/humanities, education or other academic areas—e.g., **Anthropology** (ANTH 240: Language and culture), **History** (one Advanced African/African American History—HIST 437 or 477, or Asian History—HIST 434 or Latin American History—HIST 442), **Geography** (GEOG 103: Introductory Cultural Geography), **Music** (MUS 125 or 126: Pop Music USA, Jazz or R&B) **Philosophy** (PHIL 115: Race, Class and Gender; or PHIL

205: Culture, Identity and Diversity), **Sociology** (SOC 446: Race, Culture and Ethnicity), **Theater** (THEA 285 Theatre of Diversity) **Women's Studies** (WOST 220: Perspectives on Women and Change or WOST 251: Coming Age: Gender and Culture.) All these are just examples subject to the approval of ES advisors.]

**Required Minor: None**

### ETHNIC STUDIES MINOR

**Required for Minor (Core, 3 credits)**

ETHN 100 American Racial Minorities (3)

**Required Electives (18 credits):**

Select 3 credits from the following:

ETHN 110 ETHN 120 ETHN 130  
ETHN 140

Select 9 credits from the following:

ETHN 401 ETHN 402 ETHN 410  
ETHN 420 ETHN 430 ETHN 440  
ETHN 450 ETHN 460 ETHN 470

Select 6 credits from the following:

ETHN 101 ETHN 150 ETHN 200  
ETHN 220 ETHN 240 ETHN 295  
ETHN 296 ETHN 300 ETHN 400  
ETHN 480 ETHN 486 ETHN 490  
ETHN 495 ETHN 496 ETHN 497  
ETHN 499

### POLICIES/INFORMATION

**GPA Policy.** 2.0 GPA.

**P/N Grading Policy.** No more than 1/4 of total undergraduate credits may be taken as P/N.

### COURSE DESCRIPTIONS

#### 100 (3) American Racial Minorities

A study of American racial/ethnic minorities, especially the histories of Native Americans, African Americans, Hispanic Americans, and Asian Americans. Their roles and contributions to American society will be emphasized.  
F, S

#### 101 (3) Introduction to Multicultural and Ethnic Studies

This course introduces students to multicultural and ethnic knowledge and values in and outside the United States. Students are exposed to such issues as race, culture, ethnicity, dominance, immigration, stereotypes, discrimination, and intergroup relations through interdisciplinary approaches—anthropological, economic, historical, political, psychological and/or sociological.  
F, S

#### 110 (3) Introduction to African American Studies

This course will explore the historical, social, political, and cultural experiences of African Americans. It will also examine the contributions of African Americans to the growth and development of the United States.  
V

#### 120 (3) Introduction to American Indian Studies

This course is an examination of the historical and con-

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## Ethnic Studies

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temporary issues and forces affecting American Indian peoples. V

### **130 (3) Introduction to Asian American Studies**

Introduction to the history and cultures of the major Asian American ethnic groups with a comparative approach to their similarities and differences. V

### **140 (3) Introduction to Latino/Hispanic Studies**

A survey of the history and present status of Hispanics/Latinos in the United States from 1848. Emphasis will be on culture, history, and socio-political patterns. V

### **150 (3) Multi-Cultural/Ethnic Experience**

Students will participate in field trips, activities, and guest discussions that will enable them to interact with people ethnically (race, religion, lifestyle, etc.) different from the students, to understand their perspectives and to appreciate their unique experiences and/or contributions to the U.S. pluralistic society. Students are expected to learn actively in and outside the classroom by experiencing events or people from diverse cultural groups. F

### **200 (3) Interracial/Interethnic Dating/Marriage**

This course deals with the history of interracial/interethnic and intergroup (sex, age, religion, etc.) dating and marriage in the U.S. It will explore dating patterns, mate selection theories and impacts on multi-racial children in the area of identity and adjustment. V

### **220 (3) Civil Rights in the U.S.**

This course will focus on the struggle for civil rights by diverse groups in the United States. Emphasis will be on how these struggles have impacted their communities and cultural pluralism in the U.S. V

### **240 (3) Rural Studies**

Students will explore some of the major variables that impact the lives of rural populations. Emphasis will be placed on understanding the diversity in experiences and history of both national and international rural communities, as well as on understanding which public policies can maximize the success of rural environments. V

### **295 (1-4) Selected Topics**

The course is offered according to student demand and instructor availability/expertise. A variety of topics related to ethnic and cultural areas will provide curriculum enrichment on an ongoing, but irregular basis. V

### **296 (1-3) Workshop**

Courses will employ changing topics from year to year and will deal with cogent issues of current interest to ethnic and minority communities. V

### **299 (1-3) Individual Study**

Exploratory independent study and research. Areas of interest not addressed in regular courses are given priority. Maximum three credits toward the major; one credit toward the minor.

Pre: Two other ETHN courses. F, S

### **300 (3) American Indian Leaders**

The course surveys the social and cultural dimensions of traditional and contemporary American Indian leadership.

This leadership is understood through a study of the lives, strategies, and words of American Indian leaders who played significant roles in the history of contact between Euro-American and indigenous North American peoples. Pre: ETHN 120, or consent V

### **400 (3) Cultural Pluralism**

This course will examine issues confronted in a multi-cultural society. It will study ethnic/minority groups not usually included in mainstream society, including their uniqueness and harmonious coexistence with other ethnic groups. F, S

### **401 (3) Applied Cultural Research**

This course introduces concepts and methods of applying socio-cultural understanding to contemporary problems to bring about the empowerment of affected people. Case/field studies and other research methods in social sciences will be used to illustrate the impact and problems of cultural change with special attention to its affect on disadvantaged groups of people. Students will also design their own applied projects.

Pre: ANTH 101, 103 or 230 or consent; ETHN 100, 101 or 150 or consent V

### **402 (3) Ethnic Research Method/Skills**

This course deals with scientific methods and professional and/or investigative skills in Ethnic Studies. From an interdisciplinary perspective, students are expected to learn how to do research on ethnic and cross-cultural issues (e.g., hypothesis, different methods, data collection/analysis and report writing.) Other professional skills/issues related to Ethnic Studies are also discussed to meet the needs of students.

Pre: ETHN 100 or 101 or 150, or Consent V

### **410 (3) Foundations of Oppression**

Students will examine the forces which create and maintain prejudice, discrimination and racism within global perspectives. Special attention will be given to the work of Paulo Freire.

Pre: ETHN 100 or 400 F

### **420 (3) African American Studies**

This course will provide students with an in-depth examination of the issues affecting present-day Africans, and those of the Black Diaspora. Possible topics are fair representation in the media, education, cross-cultural interactions, economics, politics/law, and racial identity.

Pre: ETHN 110 or 400 or consent V

### **430 (3) American Indian Studies**

This course will provide multiple perspectives about the issues facing American Indian peoples today. Topics to be considered are education, health care, gender, land rights, religious freedom, cultural identity, natural resource management, law enforcement, economic development, self-determination, and mass media images.

Pre: ETHN 400, or consent V

### **440 (3) Asian American Studies**

Examination of current issues affecting the status of Asian Americans. The focus of this course will vary to

## Family Consumer Science

reflect students' interests in the area of politics, education, economics, social and/or cultural dealing with Asian Americans.

Pre: ETHN 400, or consent V

### 450 (3) Latino/Hispanic Studies

Thematic examination of major issues surrounding Latino/Hispanic communities in the United States. Emphasis will be on education, labor, politics, social welfare and migration.

Pre: ETHN 400, or consent V

### 460 (3) Urban Minority Problems

This course is concerned with racial/ethnic minorities who live in large urban (inner city) areas. It is especially concerned with the roles that culture and discrimination play in the shaping of America's ghettos, barrios, reservations, and Chinatowns. S

### 470 (3) Women of Color

Examines the effects of sexism and racism on women of color and provides an understanding of the significant contributions they have made in their struggle against oppression.

Pre: ETHN 400, or consent S

### 480 (3) Social Justice in Ethnicity and Gender

Survey of institutional sexism and racism including their impact on U.S. society. Special attention will be given to their interconnectedness.

Pre: ETHN 400 or consent V

### 486 (3) Racial and Ethnic Politics

The course examines racial and ethnic minorities, and the mutual influences between these groups and the structures, procedures and issues of US politics. Major topics include: opinion on racial issues, the representation of minorities in elective and appointive offices, and the nature of value conflicts underlying contemporary racial issues, including affirmative action, immigration, welfare, language policies and Native American tribal issues. V

### 490 (3) Racial/Ethnic Families in the U.S.

This course will examine the different definitions of "family" through time in the United States. It will focus on changes in the African, Native, Hispanic/Latino, and Asian-American families. It will compare and contrast differences and similarities among ethnic minority families as well as between them and white ethnic families.

Pre: ETHN 400, or consent V

### 495 (3) Selected Topics

Multiple perspectives on the selected topic(s) will be addressed. Student scholars may contribute to the selection and/or refinement of the topic(s). Highly motivated seniors will join with graduate students in a graduate-type seminar.

Pre: ETHN major V

### 496 (1-3) Workshop

Courses will employ changing topics from year to year and deal with cogent issues of current interest to one or more minority communities. V

### 497 (1-10) Internship

Supervised, scholarly experience to which the theories and methodologies of ethnic studies can be applied. Opportunities may be on-campus and/or off-campus, including work in other countries.

Pre: ETHN major or minor F, S

### 499 (1-3) Individual Study

Advanced independent study and research. Maximum of three credits toward the major; one credit toward the minor.

Pre: 2 ETHN courses at 300/400 level F, S

## Family Consumer Science

*College of Allied Health & Nursing*

*Department of Family Consumer Science*

102 Wiecking Center • 507-389-2421

Web site: [www.mnsu.edu/dept/fcs](http://www.mnsu.edu/dept/fcs)

Chair: Kelley Brigman

Joye Bond, Kelley Brigman, Jill Conlon, Sally Weerts, Betty Young

The focus of the Department of Family Consumer Science is to promote the well-being of people, the enrichment of quality environments, and to prepare men and women to assume essential professional roles in a culturally diverse global society. The comprehensive program provides training for professional roles within family consumer science education; family life; early childhood education; nutrition education, and dietetics.

**Admission to Major** is granted by the department. Minimum admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

### Policies/Information

**GPA Policy.** All FCS courses required for an option must be at "C" level or higher.

**P/N Grading Policy.** All FCS courses required for an option must be taken for a grade, except where P/N grading is mandatory.

### FAMILY CONSUMER SCIENCE, BS

#### Required for Major (Core, 3 credits):

This core is required for all options.

FCS 101 Introduction to Family Consumer Science (3)

#### Required for Major (Option):

Select one of the following options to correspond with personal and professional objectives:

#### DIETETICS OPTION

The Dietetics Option\* promotes growth among students wanting to become competent dietetics professionals by providing the 'highest practicable quality' advisory, academic, real-life and interactive opportunities while at MSU, and by developing confidence and competence to advance after graduation to Dietetics Internship, graduate students and/or related employment.

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## Family Consumer Science

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Students who choose to become a Registered Dietitian (RD) upon graduation from MSU will also:

- a. Meet published requirements to receive a Verification Form from the Dietetics Director.
- b. Apply, be accepted and complete a supervised practice program (Dietetic Internship).
- c. Pass a national registration examination.

MSU faculty are committed to positioning majors for successful transition from MSU to Dietetic Internship and beyond. Regular and continuous advising is recommended to be successful.

Graduates are employed as RDs or non-RD Nutritionists in health care; community, public health, and corporate fitness settings or as members of food management teams.

\* The Dietetics Option, a Didactic Program in Dietetics (DPD) of the American Dietetic Association (ADA), is accredited by the Commission for Accreditation for Dietetics Education of the ADA, 216 W. Jackson Blvd., Chicago, IL 60606 (312-899-4876).

### Family Consumer Science (3 credits):

FCS 101 Introduction to Family Consumer Science (3)

### Required General Education (22 credits):

BIOL 270 Microbiology (4)  
CHEM 105 Introduction to Chemistry (3)  
COMS 100 Computer Science (4)  
ENG 101 Composition (4)  
ETHN 150 Multi-Cultural Experience (3) **or**  
ETHN 101 Introduction to Ethnic Studies (3)  
MATH 112 College Algebra (4)  
POL 103 Introduction to Public Life (3) **or**  
POL 111 United States Government (3)  
SOC 101 Introduction to Sociology (3)  
SPEE 102 Public Speaking (3) **or**  
SPEE 100 Fundamentals of Speech Communications (3)

### Required Support Courses (42 credits):

BIOL 220 Human Anatomy (4)  
BIOL 230 Human Physiology (4)  
CHEM 111 Chemistry of Life Processes (5)  
CSP 471 Interpersonal Helping Skills (3)  
ENG 271 Technical Communication (4)  
HLTH 321 Medical Terminology (3)  
HLTH 475 Biostatistics (3) **or**  
STAT 154 Elementary Statistics (3)  
MRKT 100 Global Business Concepts (3)  
MGMT330 Principles of Management (3)  
MGMT440 Human Resource Management (3)  
PSYC 207 Introduction to Behavior Analysis (4)  
PSYC 476 Behavior Therapy (3)

### Required Professional Courses (39 credits):

FCS 240 Nutrition I (3)  
FCS 440 Nutrition II (3)  
FCS 442 Clinical Dietetics I (3)  
FCS 448 Clinical Dietetics II (3)  
FCS 252 Food Service Systems I (3)  
FCS 340 Food Science (4)  
FCS 342 Food Production Management (3)  
FCS 350 Food Service Systems II (3)

FCS 444 Experimental Food Science (3)  
FCS 301 Lifespan Development (3)  
FCS 446 Lifespan Nutrition (3)  
FCS 483 Adult Education (2)  
FCS 492 Dietetics Seminar (1)  
FCS 498 Undergraduate Internship (2)

### **FAMILY LIFE AND CHILD DEVELOPMENT OPTION**

This option helps prepare men and women to work with children, adults and families in a variety of human services and educational settings.

### Family Consumer Science Core (3 credits)

FCS 101 Introduction to Family Consumer Science (3)

### Required for Option (29-30 credits)

FCS 100 Personal and Family living (3)  
FCS 270 Family Housing (2)  
FCS 275 Consumers in the Economy (3)  
FCS 301 Lifespan Development (3)  
FCS 311 Family Life and Sex Education (3)  
FCS 400 Culturally Diverse Family Systems (3)  
FCS 401 Family Life Development (3)  
FCS 475 Family Policy (2)  
FCS 482 Teaching Family Life/Parent Education (2)  
FCS 488 Parenting Education (3)  
FCS 496 Selected Topics (2-3)

### Required Electives (13-16 credits):

FCS 230 Child Care Psychology (3)  
FCS 303 Working with Families (2)  
FCS 408 Family Life Dynamics (3)  
FCS 416 Pre-School Child (2)  
FCS 446 Lifespan Nutrition (3)  
FCS 474 Resource Management for Families and Special Needs People (4)  
FCS 478 Family Finance (2)  
FCS 483 Adult Education in FCS (2)  
FCS 496 Selected Topics (2-3)

### Internship (0-6 credits)

FCS 497 Internship (1-6)  
FCS 495 Internship (3-4)

### Support Courses (6-9 credits)

Students may select up to 6 credits of support courses from the FCS Department or another department. Advisor approval required for these courses. Students are encouraged to take a statistics course approved by their FCS advisor.

### Required Minor: None.

### **FOOD AND NUTRITION OPTION**

This option prepares graduates for various careers in foods, food services, and/or nutrition, such as restaurant or school lunch management; public relations, marketing or sales in business and industry, such as grocers, or with public utilities and government agencies; and/or in corporate food distribution, production, sales and service. A minor in a related area and supervised internship during the major allow students to gain experience in a particular area of interest.



## Family Consumer Science

### Family Consumer Science (3 credits):

FCS 101 Introduction to Family Consumer Science (3)

### Required for Option (42 credits)

FCS 100 Personal and Family Living (3)  
 FCS 120 Clothing and People (2)  
 FCS 140 Introduction to Nutrition (3)  
 FCS 240 Nutrition I (3)  
 FCS 252 Food Service Systems I (3)  
 FCS 270 Family Housing (2)  
 FCS 275 Consumers in the Economy (3)  
 FCS 340 Food Science (4)  
 FCS 342 Food Production Management (3)  
 FCS 350 Food Service Systems II (3)  
 FCS 440 Nutrition II (3)  
 FCS 444 Experimental Food Science (3)  
 FCS 446 Lifespan Nutrition (3)  
 FCS 483 Adult Education (2)

### Choose a minimum of 2 credits from the following courses:

497 Internship (G)  
 498 Internship (P/N)

### Required Electives (15 credits):

CHEM 105 Introduction to Chemistry (3)  
 CHEM 111 Chemistry of Life Processes (5)  
 ENG 271 Technical Communication (4)  
 STAT 154 Elementary Statistics (3) **or**  
 HLTH 475 Biostatistics (3)

### Required Minor: None.

### FAMILY CONSUMER SCIENCE EDUCATION BS TEACHING

### Family Consumer Science Core (57 credits)

FCS 101 Introduction to Family Consumer Science (3)  
 FCS 100 Personal and Family Living (3)  
 FCS 120 Clothing and People (2)  
 FCS 140 Introduction to Nutrition (3)  
 FCS 270 Family Housing (2)  
 FCS 275 Consumers in the Economy (3)  
 FCS 280 Orientation to FCS Education (2)  
 FCS 301 Lifespan Development (3)  
 FCS 311 Family Life and Sex Education (3)  
 FCS 331 Textiles and Clothing Construction (3)  
 FCS 340 Food Science (4)  
 FCS 400 Culturally Diverse Family Systems (3)  
 FCS 440 Nutrition II (3)  
 FCS 401 Family Life Development (3)  
 FCS 416 Pre-School Child (2)  
 FCS 474 Resource Management for Families and Special Needs People (4)  
 FCS 482 Teaching Family Life/Parent Education (2)  
 FCS 483 Adult Education in FCS (2)  
 FCS 484 Program Development in Family Consumer Science (4)  
 FCS 488 Parenting Education (3)

### Required for Major (Professional Education, 30 credits):

See the SECONDARY EDUCATION section for admission requirements to Professional Education and a list of required professional education courses.

### Required Minor: None

### FAMILY CONSUMER SCIENCE MINOR

A minor in FCS requires 20 semester credits of courses approved by a FCS advisor. Students may select a minor in a specific content area such as family life and Child development or foods and nutrition or may select a more general minor including FCS courses from more than one area.

### COURSE DESCRIPTIONS

#### 100 (3) Personal and Family Living

Emphasizes individual growth and interpersonal relationships within our diverse society. Focuses on issues such as interpersonal communication, conflict resolution, mate selection, marriage and family issues, family strengths, stress and crises, parenting decision-making and parent-child relationships, resource management, and personal and family financial issues. F, S

#### 101 (3) Introduction to Family Consumer Science

An overview of the scope of family consumer sciences and the career potentials of the profession. F, S

#### 120 (2) Clothing and People

Relationship of clothing to people from cultural, social, psychological, economic and aesthetic perspectives. F

#### 140 (3) Introduction to Nutrition

An introductory nutrition class which emphasizes the scientific method and natural science principles from biochemistry, physiology, chemistry, and other sciences to explain the relationships between food and its use by the human body for energy, regulation, structure, and optimal health. F, S

#### 230 (3) Child Care Psychology

Principles of psychology applied to child rearing.

#### 240 (3) Nutrition I

The science of six nutrient classes, including digestion through metabolism, and weight loss from body fat. Pre: Chemistry background F, S

#### 252 (3) Food Service Systems I

Principles of food services operations related to menu planning, standardized recipes, production and service for profit and nonprofit settings. Includes the NRA ServSafe certification. F

#### 270 (2) Family Housing

Physical, psychological, social, and managerial aspects of housing. Reciprocal relationship between housing and people. Guidelines and basic principles in planning for individual and family needs. S

#### 275 (3) Consumers in the Economy

Economic decision making related to achieving maximum satisfaction from resources spent in the marketplace on housing, food, clothing, transportation, and other dimensions of the family. Basic information about the functions and responsibilities of the consumer, laws and agencies affecting consumer well-being and sources of help. F, S

## Family Consumer Science

### **280 (2) Orientation to Family Consumer Science Education**

Nature and scope of family consumer science education as a professional career. Identification of personal competencies and interests. Presentation of varied teaching methods and techniques. S

### **281 (3) Aesthetic Applications in Family Consumer Science**

Hands on applications of aesthetics in family consumer science using family consumer science computer software. Exploration of the historical, cultural, behavioral and technological influences on aesthetics within the context of family consumer science. V

### **301 (3) Lifespan Development**

Study of the family from a historical perspective; in terms of the family system and the broader ecological system; in terms of stresses faced and coping responses. This course will address issues at each of four life stages: infancy and early childhood; the school years; transition from school to adult life; and the adult years. F

### **303 (2) Working With Families**

Study of the role of the family in the development of the young child. Provide teachers and care providers with knowledge and understanding of family systems and appropriate interactions with families. S

### **311 (3) Family Life and Sex Education**

Explores biological, physiological, and Sociological perspectives of human sexuality. The course examines personal and family relationships and addresses family life and sex education teaching methods for school and community settings. S

### **331 (3) Textiles and Clothing Construction**

Principles and hands on application of textiles and clothing construction. Includes analysis of ready-to-wear apparel. S

### **340 (4) Food Science**

Study of why, how, and when physical and chemical phenomena occur during the preparation of food and its products. Includes discussion and laboratory experience demonstrating how preparation methods affect food quality, composition, and nutritive value. F

### **342 (3) Food Production Management**

Planning, preparing and serving meals with emphasis on effective management, nutritive needs, purchasing, and equipment. Includes quantity food service laboratory. Pre: FCS 252, 340 S

### **350 (3) Food Service Systems II**

Principles of food services management related to budgeting, food safety and operational sanitation, analysis and control of quality and quantity in institutional and public food service operations.

Pre or Coreq: 342 S

### **370 (3) Housing and Lifestyle**

Issues in lifestyle housing, e.g. aging, children, special needs, low income, head of family, and single person households. Study of housing types and designs including solar

and earth sheltered. Constraints, deficiencies and evaluation of housing issues.

Pre: FCS 270 V

### **400 (3) Culturally Diverse Family Systems**

An analysis of culturally diverse family systems in America; emphasis on relationships within the family and with the larger community across the family life cycle. F

### **401 (3) Family Life Development**

The course is a study of development through the family life cycle. Emphasis on developmental interaction and systems theory. S

### **408 (3) Family Life Dynamics**

Same as SOC 408.

### **415 (1-2) Student Organization**

The teacher-coordinator's role as a vocational club advisor. V

### **416 (2) Pre-School Child**

Study of preschool child by observation and participation in nursery school setting. S

### **437 (1-3) Topic: Textiles and Clothing**

Topics of current interest. May be repeated. V

### **440 (3) Nutrition II**

An advanced nutrition course in the function and interaction of nutrients in metabolic processes. Contains a nutrition research component and research case study, focusing on metabolism in persons selected by the student.

Pre: BIO 230, CHEM 111, ENG 271, FCS 240, HLTH 475 (or STAT 154) or consent S

### **442 (3) Clinical Dietetics I**

The role and influence of dietetics in society, nutritional assessment and care plans, dietetic principles applied to normal and malnourished states. Case-based approach.

Pre: FCS 440; HLTH 321 or concurrent F

### **444 (3) Experimental Food Science**

Food quality, safety, formulation, processing, preservation, and biotechnology are explored. Original food science experiments are planned, executed, interpreted, and presented using appropriate scientific techniques.

Pre: FCS 340; HLTH 475; (or STAT 154) S

### **445 (2) Food Preservation**

Principles of and laboratory experience in food preservation by drying, freezing, canning, pickling, and jelly making. V

### **446 (3) Lifespan Nutrition**

Study of nutritional needs of pregnancy, infancy, childhood, and adulthood. Experience in group dynamics in providing nutritional education to a target population.

Pre: FCS 140 or 240 or consent F

### **448 (3) Clinical Dietetics II**

The pathophysiological, nutrient assessment, planning and counseling aspects of biliary, surgical, endocrine, cardiovascular and renal conditions. Case-based approach.

Pre: FCS 442; CSP 471 and PSYC 476 or concurrent S

## Finance

### 472 (2) Residential Management

An in-depth exploration into planning and managing a variety of residential property facilities. Specifically addresses employment as a manager of such properties.

Pre: FCS 270 and 370

F

### 474 (4) Resource Management for Families & Special Needs People

The system approach to analyzing family situations to make decisions and correlate resources in the resolution of family managerial problems. Emphasis on the application of managerial skills to lifestyle situations: young-families, elderly, special needs, singles and low income.

S

### 475 (2) Family Policy

An examination and analysis of the impact of law and public policy on family life.

V

### 478 (2) Family Finance

Introduce students to the how's and why's of family financial management to reduce mistakes made in successfully managing financial aspects of life. For non-business majors.

V

### 482 (2) Teaching Family Life/Parenting Education

Analyze issues and concerns related to family life education. Investigate teaching strategies and methods of evaluation. Preparation of appropriate lesson plans.

F

### 483 (2) Adult Education in Family Consumer Science

Philosophy and objectives of adult education in family consumer sciences with emphasis on informal teaching-learning environments; procedures for planning and developing programs; and teaching experiences with the adult learner.

F

### 484 (4) Program Development in Family Consumer Science

Philosophy, scope, and administration of programs for youth of varied abilities, interests and socioeconomic levels. Curriculum development and evaluation procedures.

F

### 487 (1-3) Topic: Family Consumer Science Education

Current issues and/or research findings to be announced as offered. May be repeated.

V

### 488 (3) Parenting Education

A systems perspective on parent-child relationship. This course covers parent-child issues during the stages of human development. It also focuses on special needs children and families, cross-cultural issues and family violence. Emphasis is on research and theory and parenting education strategies.

F

### 490 (1-3) Workshop

Workshop topics vary as announced in class schedule. May be repeated.

V

### 491 (1-4) Inservice

May be repeated on each new topic.

V

### 492 (1) Dietetics Seminar

Preparation for advancement in a career as a registered dietitian, including a first draft of the dietetic internship application.

Pre: Graduation by the following May to December; FCS 498 or concurrent

F

### 495 (3-4) Intern: Early Child Family

A scheduled work assignment that will include on-site experiences with parents in early childhood family education.

F, S

### 496 (2-3) Selected Topics: FLCD

Topics announced as offered. May be repeated.

S

### 497 (1-6) Internship

A scheduled work assignment with supervision in private business, industry and government agency appropriate to each area of concentration.

Pre: Consent

F, S

### 498 (1-6) Undergraduate Internship

A scheduled work assignment with supervision in private business, industry, and government agency appropriate to each area of concentration.

Pre: Consent

F, S

### 499 (1-4) Individual Study

Arranged with the instructor.

Pre: Consent

F, S

## Finance

*College of Business*

*Department of Finance*

150 Morris Hall • 507-389-1319

Chair: Harold Thiewes

Chan Lee, Henry M. Okleshen, Roger Severns, Richard Swanson, Steve Wilcox, Michael Young

The objective of the department is to prepare students for entry-level positions in finance, insurance or real estate. Five areas of emphasis are available within this major.

The undergraduate finance program deals with the theory, organization and operations of the financial system from both the social and managerial perspectives. Students are expected to develop expertise in making organizational and personal judgments and decisions involving financial data. Additionally, students present their analyses in both written and oral form.

Students may select and complete one or more of the following emphases: Corporate Finance, Institutional Finance, Insurance, Financial Planning, Investment Analysis.

**Admission to the College of Business** typically occurs at the beginning of the student's junior year. A student must be admitted for permission to register for 300-400 level courses. A student can only expect one temporary admission to the College of Business before permanent admission.

1. GPA of 2.5 for admission.
2. Completion of 33 credits of general education requirements. Consult bulletin for cultural diversity requirements.

## Finance

3. Demonstrated microcomputer competency by successfully completing COMS 101, Introduction to Microcomputers, or equivalent.
4. Completion of ACCT 200, 210; ECON 201, 202, 207; MGMT 200; MATH 112; BLAW 200; Second Year Experience 201.
5. Completion of, or in progress, 60 semester credits.

### FINANCE BS

#### Required General Education (7 credits):

ECON 201 Principles of Macroeconomics (3)  
MATH 112 College Algebra (4)

#### Required Support Courses (25 credits):

ACCT 200 Financial Accounting (3)  
ACCT 210 Managerial Accounting (3)  
BED 345 Business Communications (3)  
BLAW 200 Legal, Political and Regulatory Environment of Business (3)  
COMS 101 Introduction to Microcomputers (3)  
ECON 202 Principles of Microeconomics (3)  
ECON 207 Business Statistics (4)  
MGMT 200 Introduction to MIS (3)

#### Required Upper Division College of Business Core Courses (Core, 19 credits):

MRKT 310 Principles of Marketing (3)  
MGMT 330 Principles of Management (3)  
FINA 362 Business Finance (3)  
IBUS 380 Principles of International Business (3)  
MGMT 346 Production and Operations Management (3)  
FINA 395 Personal Adjustment to Business (1) (previously MGMT 395)  
MGMT 481 Business Policy and Strategy (3)

#### Required Finance Core Courses (15 credits)

FINA 460 Investments (3)  
FINA 462 Strategic Financial Management (3)  
FINA 464 Financial Institutions and Markets (3)  
FINA 467 Insurance and Risk Management (3)  
Choose one of the following:  
FINA 477 Real Estate (3)  
FINA 478 Real Estate Investment (3)

#### Required for Major (Option, 12 credits):

Select one of the following options:

#### **CORPORATE FINANCE**

FINA 461 Short-Term Financial Management (3)  
ACCT 300 Intermediate Financial Accounting I (3)  
ACCT 310 Management Accounting I (3)  
Choose one of the following:  
FINA 463 Security Analysis (3)  
ACCT 301 Intermediate Financial Accounting II (3)  
ACCT 311 Management Accounting II (3)  
ACCT 410 Business Income Tax (3)  
ACCT 411 Individual Income Tax (3)

#### **FINANCIAL PLANNING**

FINA 459 Personal Financial Planning (3)  
FINA 470 Life and Health Insurance (3)

ACCT 411 Individual Income Tax (3)  
Choose one of the following:  
FINA 463\*\*Security Analysis (3)  
FINA 466\*\*Employee Benefit Planning (3)  
FINA 468 Commercial Property/Liability Insurance (3)  
FINA 477\* Real Estate (3)  
FINA 478\* Real Estate Investment (3)  
ACCT 410\*\*Business Income Tax (3)  
MRKT 412 Professional Selling (3)

#### **INSTITUTIONAL FINANCE**

FINA 461 Short-Term Financial Management (3)  
FINA 463 Security Analysis (3)  
FINA 482 Commercial Bank Management (3)  
Choose one of the following:  
FINA 468 Commercial Property/Liability Insurance (3)  
FINA 470 Life and Health Insurance (3)  
FINA 477\* Real Estate (3)  
FINA 478\* Real Estate Investment (3)  
FINA 480 Options and Futures (3)  
ACCT 310 Management Accounting I (3)

#### **INSURANCE**

FINA 466 Employee Benefit Planning (3)  
FINA 468 Commercial Property/Liability Insurance (3)  
FINA 470 Life and Health Insurance (3)  
Choose one of the following:  
FINA 459 Personal Financial Planning (3)  
FINA 477\* Real Estate (3)  
FINA 478\* Real Estate Investment (3)  
FINA 480 Options and Futures (3)  
ACCT 411 Individual Income Tax (3)  
MRKT 412 Professional Selling (3)

#### **INVESTMENT ANALYSIS**

FINA 463 Security Analysis (3)  
FINA 480 Options and Futures (3)  
ACCT 300 Intermediate Financial Accounting I (3)  
Choose one of the following:  
FINA 459 Personal Financial Planning (3)  
FINA 466 Employee Benefit Planning (3)  
FINA 470 Life and Health Insurance (3)  
FINA 476 Real Estate Appraisal (3)  
FINA 477\* Real Estate (3)  
FINA 478\* Real Estate Investment (3)  
ACCT 301 Intermediate Financial Accounting II (3)  
ACCT 411 Individual Income Tax (3)

\* 477 or 478, whichever not taken in core

\*\* Students who wish to meet the education requirements to sit for the Certified Financial Planner (CFP) are required to take FINA 463, FINA 466, and ACCT 410 in addition to completing the Finance, Insurance and Real Estate core requirements and the required courses in the Financial Planning area of emphasis.

**Required Minor: None.**

## FINANCIAL PLANNING MINOR

### Required for Minor (18 credits):

FINA 100 Personal Financial Management (3) **or**  
FINA 362 Business Finance (3)

FINA 459 Personal Financial Planning (3)

FINA 467 Insurance and Risk Management (3)

FINA 477 Real Estate (3)

Choose a minimum of 6 credits from the following:

FINA 460      FINA 464      FINA 466

FINA 470      FINA 497      FINA 498

ACCT 411      MKT 412

## POLICIES/INFORMATION

Students have an advisor from their area of interest assigned to them. Questions and concerns pertaining to advising and the assignment of advisors can be answered by Larry Herke, student relations coordinator, 151 Morris Hall, telephone 507-389-2963.

Students must be admitted to the College of Business and the program to be granted a Bachelor of Science degree, major in Finance. College of Business students must complete a minimum of 64 credits outside the College of Business.

Students who are non-business majors, business minors, or those who are not seeking a four year degree may not complete more than 30 credits in the College of Business.

**Residency.** Transfer students must complete a minimum of 30 resident credits at the upper division (300-400) in the College of Business. Transfer students pursuing a major or minor must also complete 50% (one half) of their major or minor course work through MSU.

**Information Technology Initiative.** Students with a major or minor in the College of Business are required to purchase a notebook computer with a standard set of applications from the Campus Computer Store at Minnesota State University. Students who are majoring in other colleges will be able to enroll in non-notebook classes offered once per year. For further information see the College of Business section at the front of this bulletin.

**GPA Policy.** Students must earn a minimum grade-point average of 2.0 (C) on the total courses taken in the College of Business to meet graduation requirements.

**P/N Grading Policy.** No more than one-fourth of a student's major shall consist of P/N grades.

**Assessment.** The College of Business believes that the assessment of its programs makes a vital contribution to those programs and student learning. Student participation is an important and expected part of the assessment process.

**Student Organizations** Delta Sigma Pi is a coeducational business fraternity organized to further the camaraderie of business students and professionals. Delta Sigma Pi provides members the opportunity to network with current business students and alumni throughout the United States.

The Finance Club provides students with a direct link to professionals employed in finance, insurance, or real estate positions. This is a professional and social club and all majors are welcome.

The Financial Planning Club is a student chapter for the International Association for Financial Planning (IAFP) at MSU. It maintains strong ties with the IAFP-MN chapter, as well as with other practitioners in the field.

The Council of Student Business Organizations (COSBO) which is comprised of the presidents of the seven organizations and the college representative to the Student Senate, works directly with the Dean's office in the coordination of activities of the various organizations and sponsors activities of their own.

## COURSE DESCRIPTIONS

### 100 (3) Personal Financial Management

Fundamental concepts of managing cash flows: preparation of personal budget, personal debt management, financial goal establishment, savings and investments, insurance.

F

### 362 (3) Business Finance

An introduction to finance relating to problems, methods, and policies in financing business enterprise.

Pre: ACCT 200- Jr. Standing

F, S

### 395 (1) Personal Adjustment to Business (formerly MGMT 395)

This course reviews the steps to prepare for future job placement. Topics include the preparation of a credentials file, interview skills, the creation of an effective resume and cover letter, the process of networking, the internship program, requirements for graduation, opportunity for travel studies and application for graduate studies.

F, S

### 459 (3) Personal Financial Planning

Fundamental concepts of personal financial management: insurance, budgeting, credit, savings, investments, retirement and estate planning, and consumer debt management.

S

### 460 (3) Investments

Formulation of investment policy of individuals and institutions, factors influencing the values of securities, and techniques of portfolio selection and management.

Pre: FINA 362

S

### 461 (3) Short-Term Financial Management

This course describes the nature and types of credit, instrument and agencies. It deals with the management and analysis of consumer and commercial credit and control.

Pre: FINA 362

F

### 462 (3) Strategic Financial Management

Applications of financial principles and analytical tools through the use of case studies and problems from local businesses.

Pre: FINA 362

F, S



## Finance

### 463 (3) Security Analysis

Tools and techniques to aid in individual and institutional portfolio management.

Pre: FINA 362 and FINA 460 S

### 464 (3) Financial Institutions and Markets

Introduction to money and capital markets, instruments and institutions. Consideration of the management problems of financial institutions.

Pre: FINA 362 F, S

### 466 (3) Employee Benefit Planning

Fundamental concepts of employee benefits in relation to pertinent legislation, modern management techniques, and financial constraints that affect the formulation and implementation of a benefit plan.

Pre: FINA 362 S

### 467 (3) Insurance and Risk Management

Principles and practices of risk management in the recognition and treatment of exposure to potential financial loss and with primary emphasis on property and liability insurance for individuals and families.

F

### 468 (3) Commercial Property/Liability Insurance

Principles and practices of risk management in the recognition and treatment of exposure to potential financial loss. With primary emphasis on property and liability insurance for business firms.

Pre: FINA 467 V

### 469 (3) International Business Finance

Financing investments and working capital management problems in multi-national environments.

Pre: FINA 362 V

### 470 (3) Life and Health Insurance

Nature and uses of various economic security devices in protecting and/or replacing the earning power of the human life at the personal family and business levels.

F

### 476 (3) Real Estate Appraisal

Principles and techniques of real estate valuation. The market, cost and income methods for the basic structure of the course. A professional appraisal report is required.

Pre: FINA 477 or 478 S

### 477 (3) Real Estate

Fundamental principles: valuation, brokerage, financing, law, property management, land descriptions and basic investment.

S

### 478 (3) Real Estate Investment

Property productivity analysis utilizing discount cash flow methodology, urban growth and taxation factors, and economic base analysis.

Pre: FINA 362 F

### 479 (3) Executive Lectures

Guest lecturers and discussions with students by visiting senior executives of major companies coordinated by faculty. The course will include analysis of several individual companies. May be repeated.

### 480 (3) Options and Futures

Trading practices and procedures utilizing these contracts in hedging and risk management policies for business.

Pre: FINA 362 F

### 482 (3) Commercial Bank Management

Fundamental concepts of commercial bank management: banking trends and performance evaluations. Managing the balance sheet and evaluating loan requests.

Pre: FINA 362 S

### 491 (1-4) In-Service

F, S

### 497 (1-12) Internship

Supervised experience in business, industry, state or federal institutions.

F, S

### 498 (3) Internship

Supervised experience in business, industry, state or federal institutions.

F, S

### 499 (1-3) Individual Study

F, S

## Food Science Technology

*College of Science, Engineering & Technology*

*Department of Biological Sciences*

242 Trafton Science Center S • 507-389-2786

Program Director: Dorothy Wrigley, Ph.D. (Biology)

Faculty: Joye Bond, Ph.D. (Family and Consumer Science), Gregg Marg, Ph.D. (Biology), Dorothy Wrigley, Ph.D. (Biology).

The food industry in the United States is highly competitive and innovative. There is an increasing need for degreed employees with a background in science and foods. The Food Science Technology major is designed to prepare for future employment in several of the major aspects of the food industry: production, quality assurance and management; sanitation; research and development; and laboratory analysis.

### FOOD SCIENCE TECHNOLOGY BS

#### Required General Education (7 credits):

MATH 112 College Algebra (4)  
STAT 154 Elementary Statistics (3)

#### Required Support Courses (4 credits):

Choose one of the following:

CHEM 360 Principles of Biochemistry (4) **or**  
CHEM 460 Biochemistry I (3) **and**  
CHEM 465 Biochemical Techniques I (1)

#### Recommended Support Course (4 credits):

MATH 121 Calculus I (4)

#### Required for Major (Core, 39-41 credits):

BIOL 105 General Biology I (4)  
BIOL 106 General Biology II (4)  
FCS 240 Nutrition I (3)  
FCS 340 Food Science (4)  
BIOL 230 Human Physiology (4)  
BIOL 270 Microbiology (4)  
BIOL 453 Biological Engineering Analysis I (4)  
BIOL 478 Food Microbiology and Sanitation (4)  
FCS 444 Experimental Food Science (3)

Choose one course from the following:

BIOL 497 Internship I (2-4)  
BIOL 499 Independent Study (2-4)

**Required Electives (3 credits):**

Choose one course from the following:

- BIOL 452 Biological Instrumentation (3)  
BIOL 467 Industrial Hygiene (3)

**Required Minor: Yes. Chemistry.**

Refer to the College regarding required advising for students on academic probation.

**POLICIES/INFORMATION**

**Admission to major** is granted by the Department of Biology and follows minimum University admission requirements:

- a minimum of 32 earned semester credits hours
- a minimum cumulative GPA of 2.00

**GPA Policy.** A minimum GPA of 2.00 must be maintained in the major.

**P/N Grading Policy.** All courses in the major must be taken for grade.

**French**

*College of Arts & Humanities*

*Department of Modern Languages*

227 Armstrong Hall • 507-389-2116

Web site: [www.mnsu.edu/dept/modernlangWelcome.html](http://www.mnsu.edu/dept/modernlangWelcome.html)

Chair: Kimberly Contag

Damon DiMauro, John J. Janc

Education in the French language provides insight into the literature and culture of France. It also gives students a knowledge of language that enables them to work and travel in areas of the world where French is spoken. To facilitate these goals, the department sponsors a summer program in France. Students choosing to take advantage of this program, or who acquire language experience on their own initiative, may receive credit if arrangements are made in advance.

**Admission to Major** is granted by the department. Minimum University admission requirements are:

- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

**FRENCH BA, BS**

**Required for Major:**

Elementary French or other proof of skill is needed. The intermediate sequence counts toward the major.

**Required for Major (Core, 36 credits):**

- FREN 302 Composition (2-4)  
FREN 323 French Phonetics and Applied Linguistics (2-4)  
  
FREN 350 Introduction to French Literature (3)  
FREN 366 Oral Communication (2-6)  
FREN 404 French Syntax (2-4)  
Choose two courses from the following:  
FREN 420 French Seminar (1-3)

- FREN 432 French Literature I (3-4)  
FREN 442 French Literature II (3-4)  
FREN 452 French Literature III (3-4)  
Choose one course from the following:  
FREN 305 France Today (3-4)  
FREN 402 French Civilization (3-4)

**Required Minor: Yes. Any.**

**FRENCH BS, TEACHING**

**Required for Major:**

Elementary French or other proof of skill is needed. Intermediate sequence counts toward the major.

**Required for Major (Core, 40 credits):**

- FREN 302 Composition (2-4)  
FREN 323 French Phonetics and Applied Linguistics (2-4)  
FREN 350 Introduction to French Literature (3)  
FREN 366 Oral Communication (2-6)  
FREN 404 French Syntax (2-4)  
Choose two courses from the following:  
FREN 420 Seminar (1-3)  
FREN 432 French Literature I (3-4)  
FREN 442 French Literature II (3-4)  
FREN 452 French Literature III (3-4)  
Choose one course from the following:  
FREN 305 France Today (3-4)  
FREN 402 French Civilization (3-4)  
MODL 460 Methods of Teaching A Modern Language (3)  
MODL 461 Applied Modern Language Teaching Methods (1)  
MODL 462 Foreign Language Elementary School Methods (3)  
MODL 463 Applied Foreign Language Elementary School Methods (1)

**Required for Major:** Students must “demonstrate intermediate-high level speaking proficiency as defined in the ACTFL Proficiency Guidelines established by the American Council on the Teaching of Foreign Languages. Also required for the major are first-hand experiences with the target cultures.

**Required for Major: (Professional Education, 30 credits):**

See the SECONDARY EDUCATION section for admission requirements to Professional Education and a list of required professional education courses.

**Required Minor: None.**

**FRENCH MINOR**

**Required for Minor:**

Elementary French or other proof of skill is needed. Intermediate sequence counts toward the minor.

**Required for Minor (Core, 24 credits):**

- FREN 302 Composition (2-4)  
FREN 323 French Phonetics Applied Linguistics (2-4)  
FREN 350 Introduction to French Literature (3)  
FREN 366 Oral Communication (2-6)

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## French

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FREN 404 French Syntax (2-4)  
Choose one course from the following:  
FREN 305 France Today (3-4)  
FREN 402 French Civilization (3-4)

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### POLICIES/INFORMATION

**GPA Policy.** A grade of C or better must be earned for major or minor credit.

**P/N Grading Policy.** Work done for a major or minor must be done for a letter grade beyond the second-year level. A grade of P must be earned for major or minor credit in all work done on a P/N basis.

**Proficiency Policies.** Students with high school language experience may take the CLEP test for a maximum of 12 credits. Students who wish to receive credit by examination may take tests to have their proficiency evaluated. Students may not take a proficiency test for a course in which they are enrolled. The department reserves the right to deny admission to courses for those students whom a faculty member determines to have mastered the material already.

**Fulfilling B.A. Language Requirement.** Students who wish to validate the B.A. language requirement may take a language competency test from the Department of Modern Languages at no cost. If they are evaluated as being proficient, they need not take any more language courses, but they receive no credit. Students will not be considered exempt from the language requirement merely because they have taken two years of high school language. Students may receive elective credit for fewer than 8 credits of an elementary language sequence, if these are satisfactorily completed. Such credits do not apply toward the 8-credit requirement for the B.A. degree.

**Residency Requirement.** Transfer credits will be applied only if they are the equivalent of work offered by the Department of Modern Languages for the major or minor in that language. In addition, a minimum of work must be taken at Minnesota State University, Mankato as follows. Major: a minimum of three upper division courses other than Independent or Individual Study, for a total of at least 8 credits. At least two of these courses must be at the 400 level. Minor: a minimum of two upper division courses other than Independent or Individual Study, for a total of at least six credits.

Courses not required for a student's specific baccalaureate degree should be chosen according to these general guidelines:

- BA: Emphasis on literature in upper-division courses; students will most likely pursue their education beyond the baccalaureate level.

- BS: Emphasis on the ability to communicate in the language; presupposes knowledge of culture and civilization; students frequently have career goals in other disciplines for which a language is either required or recommended.  
- BS (teaching): Emphasis on communication (four skills plus culture and language analysis).

For students majoring or minoring in the College of Business, the French program offers two courses de-

signed to introduce them to various aspects of the business community in France: FREN 405 and 406.

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### COURSE DESCRIPTIONS

#### **101 (5) Elementary French I**

An introduction, within a cultural context, to the basic skills of listening, speaking, reading and writing.

#### **102 (5) Elementary French II**

An introduction, within a cultural context, to the basic skills of listening, speaking, reading and writing.

Pre: FREN 101 or equivalent

#### **200 (2-4) Entry-Level Intermediate French**

Review of grammar and vocabulary learned in elementary sequence.

Pre: FREN 101, 102, or equivalent

#### **201 (4) Intermediate French I**

Grammar review, oral practice, written composition and development of reading and listening skills within a cultural context.

Pre: One year university French or equivalent

#### **202 (4) Intermediate French II**

Grammar review, oral practice, written composition and development of reading and listening skills within a cultural context.

Pre: FREN 201 or equivalent

#### **204 (2-4) Advanced Intermediate French**

Review of grammar and vocabulary learned in intermediate sequence.

Pre: FREN 101, 102, or equivalent

#### **211 (1-3) Intermediate Readings**

A beginning reading course designed to help students improve their comprehension of written French.

#### **214 (1-3) Paris et L'ÎLE de France**

Visits to the major churches, cathedrals, castles, monuments, museums and neighborhoods in and around Paris.

Pre: FREN 101, 102, or equivalent

#### **215 (1-3) Composition**

Practice in descriptive and narrative prose. Acquisition of basic grammatical structures and vocabulary.

Pre: FREN 101, 102, or equivalent

#### **216 (1-4) Conversation**

Practice in intermediate-level conversational skills.

Pre: FREN 101, 102, or equivalent

#### **217 (1-3) Modern France**

Introduction to contemporary French civilization.

Pre: FREN 101, 102, or equivalent

#### **218 (1) On Y Va**

Preparation for study in France.

#### **221 (1-2) Independent Listening Comprehension**

Development of listening comprehension through the use of tapes, videos, films, compact discs, and other recorded materials.

#### **261 (1-3) Conversation and Pronunciation**

Systematic development of conversational idiom and vocabulary. Intensive work on pronunciation. May be

taken by majors and minors up to three times.  
Pre: FREN 201, 202, or equivalent

**293 (1-6) Supervised Study in French-Speaking Countries**

Topics will vary. Study for credit must be approved by the department prior to departure.  
Pre: FREN 101, 102, or equivalent

**299 (1-4) Individual Study**

Topics will vary.

**301 (3) Third-Year Vocabulary Review**

Systematic review of French vocabulary.  
Pre: FREN 201, 202, or equivalent

**302 (2-4) Composition**

Review of grammar and vocabulary. Practice in descriptive, narrative, and expository prose.  
Pre: FREN 201, 202, or equivalent

**304 (3) Third-Year Grammar Review**

Systematic review of French grammar.  
Pre: FREN 201, 202, or equivalent

**305 (1-4) France Today**

Social, political, and economic trends in contemporary France.  
Pre: FREN 201, 202, or equivalent

**313 (1-4) Third-Year French**

Acquisition of grammar and vocabulary beyond the intermediate sequence.  
Pre: FREN 201, 202, or equivalent

**314 (1-3) Paris et L'ILE de France**

Visits to the major churches, cathedrals, castles, monuments, museums and neighborhoods in and around Paris.  
Pre: FREN 201, 202, or equivalent

**315 (1-3) Composition**

Practice in descriptive and narrative prose. Acquisition of grammatical structures and vocabulary beyond the intermediate sequence.  
Pre: FREN 201, 202, or equivalent

**316 (1-4) Conversation**

Practice in conversational skills.  
Pre: FREN 201, 202, or equivalent

**317 (1-3) Modern France**

Introduction to contemporary French civilization.  
Pre: FREN 201, 202, or equivalent

**318 (1-4) Introduction to Business French**

Introduction to basic concepts associated with French business practices.  
Pre: FREN 201, 202, or equivalent

**320 (1-3) Seminar**

Study of an author, genre, movement, theme or period.  
Pre: FREN 201, 202, or equivalent

**322 (1) Independent Listening Comprehension**

Development of listening comprehension through the use of tapes, videos, films, compact discs, and other recorded materials.  
Pre: FREN 201, 202, or equivalent

**323 (2-4) French Phonetics and Applied Linguistics**

A study of the sound system in French. Intensive oral

practice.

Pre: FREN 201, 202, or equivalent

**350 (3) Introduction to French Literature**

A beginning literature course designed to teach students to read with understanding and critical ability.  
Pre: FREN 201, 202, or equivalent

**366 (1-6) Oral Communication**

Intensive practice in advanced conversational skills. May be repeated for credit.  
Pre: FREN 201, 202, or equivalent

**393 (1-6) Supervised Study in French-Speaking Countries**

Topics will vary. Study for credit must be approved by the department prior to departure.  
Pre: FREN 201, 202, or equivalent

**402 (3-4) French Civilization**

Survey of historical, philosophical, literary and artistic development of France from the beginning to the present.  
Pre: FREN 201, 202, or equivalent

**404 (2-4) French Syntax**

Systematic review of French grammar.  
Pre: FREN 201, 202, or equivalent

**405 (2-4) Business French I**

Study of current vocabulary, terminology and practices used in the business world. Study of developments affecting the French business, industrial and agricultural communities.  
Pre: FREN 201, 202, or equivalent

**406 (2-4) Business French II**

Study of France's position in the European Economic Community and of the development of French business law with emphasis on the obligations and rights of business people, the classification and organization of the various types of companies, the emission of contracts and other documents.  
Pre: FREN 201, 202, or equivalent

**414 (1-3) Paris et L'ILE de France**

Visits to the major churches, cathedrals, castles, monuments, museums and neighborhoods in and around Paris.  
Pre: FREN 201, 202, or equivalent

**415 (1-3) Composition**

Practice in descriptive, narrative and expository writing. Acquisition of vocabulary and advanced grammatical structures.  
Pre: FREN 201, 202, or equivalent

**416 (1-4) Conversation**

Practice in advanced conversation skills.  
Pre: FREN 201, 202, or equivalent

**417 (1-3) Modern France**

In-depth study of different aspects of contemporary French civilization.  
Pre: FREN 201, 202, or equivalent

**420 (1-4) French Seminar**

In-depth study of an author, genre, movement, theme or period.  
Pre: FREN 201, 202, or equivalent

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## French

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### 432 (1-4) French Literature I

A study of the major authors, works and movements of two successive centuries of French literature.  
Pre: FREN 201, 202, or equivalent

### 442 (1-4) French Literature II

A study of the major authors, works and movements of two successive centuries of French literature.  
Pre: FREN 201, 202, or equivalent

### 452 (1-4) French Literature III

A study of the major authors, works and movements of two successive centuries of French literature.  
Pre: FREN 201, 202, or equivalent

### 492 (1-3) Individual Study

Topics will vary.  
Pre: FREN 201, 202, or equivalent

### 494 (1-6) Supervised French Study

Topics will vary. Study for credit must be approved by the department prior to departure.  
Pre: FREN 201, 202, or equivalent

### 497 (1-6) Internship

Pre: FREN 201, 202, or equivalent

### 499 (1-4) Individual Study

Pre: FREN 201, 202, or equivalent

## MODERN LANGUAGE (MODL) COURSES FOR BS, T:

### 460 (3) Methods of Teaching Modern Languages

Introduction to theory and practice of modern language teaching, including lessons in listening, speaking, reading, writing, vocabulary, and culture. Includes testing, program design, lesson planning, and use of technology. F

### 461 (1) Applied Modern Language Teaching Methods

A field experience including placement in the secondary level school setting for students earning licensure in modern language teaching. Practicum students work with middle or high school students of French, German, or Spanish. Take concurrently with or following MODL460.

### 462 (3) Foreign Languages in the Elementary School Methods

Introduction to theory and practice of modern language teaching for children grades K-6, including oral language development, second language literacy development, content-based language instruction, and techniques for language immersion programs.

Pre: Students must demonstrate oral proficiency level of Intermediate-Mid on ACTFL scale in target language before enrolling.

### 463 (1) Applied Foreign Languages in the Elementary School Methods

A field experience including placement in the elementary level school setting for students earning licensure in modern language teaching. Practicum students work with elementary school students in French, German, or Spanish. Take concurrently with or following MODL 462.

### 465 (1-3) Workshop in Modern Language Education

Topics in modern language education. May be repeated for credit.

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## Geography

*College of Social & Behavioral Sciences*

*Department of Geography*

7 Armstrong Hall • 507-389-2617

Chair: Martin D. Mitchell

Branko M. Colakovic, Donald A. Friend, Cecil S. Keen, Jiyeong Lee, Jose Javier Lopez, Cynthia A. Miller, Amy Richert

Geography is the study of natural and cultural features and processes distributed over the earth. It is both a natural science and a social science in that it examines people and their environment and serves as bridge between the physical and cultural worlds. Furthermore, geography seeks to understand and solve the problems of modern society as they pertain to people's use of the earth's resources. The department's courses are especially suitable for students interested in liberal education, teaching, travel management, environmental management, fieldwork, cartographic and geographic information system analysis and other applied field sciences.

**Admission to Major.** Students enrolling in 300-400 level courses must be admitted to the program. Admission to major is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

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## GEOGRAPHY BA, BS

### STANDARD MAJOR OPTION - 32 credits

#### Required for Major (Core, 14 credits):

GEOG 101	Introductory Physical Geography (3)
GEOG 103	Introductory Cultural Geography (3)
GEOG 340	United States (3)
GEOG 370	Cartographic Techniques (4)
GEOG 401	Colloquium (1)

#### Required for Major (Electives, 18 credits):

Choose one cultural-systematic course from the following:

GEOG 425	Economic Geography (3)
GEOG 435	Urban Geography (3)
GEOG 437	Political Geography (3)

Choose one physical course from the following:

GEOG 217	Weather (3)
GEOG 218	Weather Lab (1)
GEOG 313	Natural Disasters (4)
GEOG 315	Geomorphology (3)
GEOG 410	Climatic Environments (3)
GEOG 420	Conservation of Natural Resources (3)

Choose one foreign regional course from the following:

GEOG 445	Latin America (3)
GEOG 450	Europe (3)
GEOG 454	Russian Realm (3)
GEOG 456	Africa (3)
GEOG 458	West Pacific Rim (3)

Choose one capstone experience from the following:



## Geography

GEOG 440 Field Studies (1-4)  
 GEOG 480 Seminar (3)  
 GEOG 491 Senior Paper (1-4)  
 GEOG 497 Internship (1-10)

Choose additional electives (above 100 level):  
 GEOG Electives

**Required for Bachelor of Arts (BA) degree ONLY:**  
 Language (8)

**Required Minor. Yes. Any.**

**PROFESSIONAL MAJOR OPTION - 48 credits**

**Required for Major (Core, 14 credits):**

Same as for Standard Major.

**Required for Major (Electives, 16 credits):**

Same as for Standard Major.

**Required for Major (Additional Electives, 18 credits):**

Choose additional electives (above 100 level):

GEOG Electives

Other Electives (6 credits may be taken outside department with department permission)

**Required for Bachelor of Arts (BA) degree ONLY:**  
 Language (8)

**Required Minor. None.**

**GEOGRAPHY MINOR (18 credits)**

**Required for Minor (Core, 9 credits):**

GEOG 101 Introductory Physical Geography (3)

GEOG 103 Introductory Cultural Geography (3)

GEOG 340 United States (3)

**Required for Minor (Electives, 9 credits, above 100 level):**

GEOG Electives

### POLICIES/INFORMATION

**GPA Policy.** A GPA of 2.0 or higher in a major or minor in geography is required for graduation. Refer to the College regarding required advising for students on academic probation.

**Pass/No Credit Policy.** P/N grading will be accepted in the major only for GEOG 401 and 497. All other courses must be taken for letter grades. All courses for a minor must be taken for letter grades.

### COURSE DESCRIPTIONS

#### 100 (3) Elements of Geography

An introduction to Geography and its themes of study. The course will familiarize students with where places are located in the world together with the cultural and physical features that pertain. Students will be tasked to think critically and diversely about various cultures and features of the modern world. F, S

#### 101 (3) Introductory Physical Geography

Survey of the processes and features of the earth's physical environment, earth-sun relationships, weather, climate, natural vegetation, soil, and landforms. Examines

their interrelations and spatial distribution using North America and world-wide examples. Some coverage of human-environmental relations. F, S

#### 103 (3) Introductory Cultural Geography

Cultural aspects of interactions between people and their environment focusing on spatial patterns of population, agriculture, politics, language, religion, industrialization, and urbanization. Emphasis is placed on the processes that create the cultural landscape and on management of land and natural resources. F, S

#### 217 (3) Weather

An examination of the processes involved in weather formation. Students will be introduced to weather map analysis, simple forecasting and observational techniques, and weather instruments. F, S

#### 218 (1) Weather Lab

This course will cover applied aspects of weather, including understanding weather codes, analysis and interpretation of weather maps, basic techniques of forecasting, and familiarity with weather instruments. F, S

#### 299 (1-3) Individual Study

An assignment that is tailored to individual needs of a student. The instructor and the student arrange the type of project for the student, such as a term paper, readings, mapping, field investigation, or computer cartography. Pre: Consent F, S

#### 301 (1) Readings for Honors

An assignment of geographic literature readings that meet the needs of the student. Usually the student provides reviews of articles or books of a geographic nature. F, S

#### 313 (3) Natural Disasters

An examination of the underlying causes of natural disasters occurring over the globe. Focus will be primarily upon weather and climate related disasters. Students will also be exposed to concepts of plate tectonics and how these affect the distribution of earthquakes and volcanism over the planet. Pre: GEOG 217 ALT-F

#### 315 (3) Geomorphology

This course will cover elements of the structure of the earth and the variety of landforms found on the earth's surface, with emphasis upon the processes, both past and present, that act upon the surface to create the landforms now visible. Local field trips. F

#### 340 (3) United States

Students will develop a knowledge of the similarities and contrasts in regional landscapes and cultures of the United States. F, S

#### 341 (3) World Regional Geography

Differences and similarities in the cultural and natural environments by the world's major regions. F, S

#### 370 (4) Cartographic Techniques

The lecture material addresses map projections, tech-

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## Geography

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nology changes in production, basic analysis and depiction of quantitative point, line and areal data. Also, the evaluation of maps and the history of cartography from a European, Oriental, and American Indian perspective is discussed. All maps are drawn using computer assistance. F, S

### **373 (4) Introductory Geographic Information Systems**

The course will be an introduction to the analysis of spatial data using the concept of a geographical information system (GIS). Content of the course will be, to a great extent, based on the NCGIA core curriculum with assignments tailored to the data and software available within the department such as ArcInfo.

Pre: GEOG 370 F, S

### **401 (1) Colloquium**

Overview of geographic work, interests, and research by guest speakers. F

### **409 (1-3) Selected Topics**

The instructor will develop a specific course on a geographic topic, such as soils, landforms, water resources, energy, housing, population geography, or some other topic for the class. F, S

### **410 (3) Climatic Environments**

A qualitative regional climatology of the world, including the Pleistocene Ice Ages and urban impacts upon climate. Emphasis is on the characteristics of particular climates and understanding the factors that control their spatial distribution.

Pre: GEOG 101, or consent F

### **412 (4) Advanced Weather**

Meteorological principles and theory are applied to the analysis and interpretation of weather data in order to better understand the structure and evolution of synoptic-scale weather systems. Basic knowledge of mathematics will be assumed.

Pre: GEOG 317 ALT-F

### **420 (3) Conservation of Natural Resources**

Survey of natural resources emphasizing energy, minerals, soils, fisheries, and water resources. Also addresses timber, wetlands, and wildlife on public and private lands. S

### **425 (3) Economic Geography**

Examines national and international economic geographical order and trade activities. Topics include economic development, competition, international trade, and impacts on the environment and people. F

### **430 (3) Historical Geography of the United States**

The evolving patterns of settlement, cultures, landscapes, and economies of the United States from the colonial period to 1990. An introduction to historical geography as a sub field of geography, including career opportunities in related professions. On Demand

### **435 (3) Urban Geography**

Hypotheses and generalization related to urban functions, structure, land use, distribution, growth, and some-

times decline. Emphasis will be mostly on the United States' urban places. F

### **437 (3) Political Geography**

Spatial problems and structure of governments, focusing on countries of the world and their geographic internal order. Covers such topics as boundary problems, strategic locations, and geopolitical explanations of international and internal relations and conflicts. S

### **440 (1-4) Field Studies**

Various excursions to study physical and cultural landscapes inside and outside of Minnesota. V

### **445 (3) Latin America**

Regional geography covering the ecological and human environment of Middle and South America, including the Caribbean. Students can pick specific topics to study in detail. The geographic relations between the USA and Latin America are also covered. F

### **446 (3) Canada**

Students will develop a knowledge of the environmental, cultural, historical, and economic geographies of Canada. Readings of bestselling fiction and scholarly works written by Canadians will provide a Canadian perspective on the nation's past, present, and future. ALT-F

### **450 (3) Europe**

Cultural, environmental, and economic background of Europe west of Russia and Ukraine. Following a general geographic survey, the course will cover major regions and countries. S

### **454 (3) Russian Realm**

Survey of the area of Russia and her neighbors. Examines regional patterns of the physical environment, natural resources, population distribution, cities, and economic activity. Relates people to the land. F

### **456 (3) Africa**

A survey of the physical and cultural resources and economic development of the continent with emphasis on current issues. Topics discussed will focus on Africa South of the Sahara.

Pre: Jr. or Sr. status V

### **458 (3) West Pacific Rim**

Examines the ecological and human environments of eastern and southeastern Asia, mainly China, Japan, and off-shore nations. The course will be supported with field information. V

### **460 (3) Geographic Teaching Methods**

The course will cover resource materials and current techniques in classroom teaching. V

### **464 (4) Teaching Earth Science**

An applied course tailored to meet practical needs of a teacher, related to curriculum development and earth science lab equipment and supplies. V

### **471 (4) Field Mapping**

This course will cover basic strategies for conducting field surveys and gathering from the real world data appropri-

ate to mapping the earth's surface. Emphasis will be upon simple but reliable techniques, ranging from compass-and-pacing to global positioning systems (GPS).

Pre: GEOG 101, or 370 F

#### 473 (4) Geographic Information Systems

Comprehensive examination of computer-assisted systems for manipulation and analysis of spatially-referenced data, including data structure and organization, input and output problems, data management, and strategies for analytical work.

Pre: GEOG 373 S

#### 476 (3) Spatial Statistics

Descriptive statistics, probability, hypothesis testing, introduction to non-parametric statistics, correlation, introduction to regression analysis, spatial statistics, and principles of data representation in graphs, tables, and statistical results. S

#### 477 (1-3) Topics in Techniques

This offering will include a variety of selected technical topics in geography, including but not necessarily limited to manual cartographic drafting and negative scribing, photomechanical techniques in production cartography, aerial photo interpretation, and advanced coverage of digital analysis of satellite-derived remote sensor data and global positioning systems.

Pre: Consent V

#### 479 (1-3) GIS Practicum

This offering will include supervised project work in raster-based and/or vector-based GIS, using problems and data drawn from local or regional agencies or other professional-level organizations with whom the Geography Department maintains a relationship. Students must have completed one of the prerequisite courses, or a course or professional-level experience.

Pre: GEOG 373, or 473, or consent V

#### 480 (1-3) Seminar

Topics vary in physical, cultural, economic, political, and historical geography, as well as environmental conservation and geographic techniques. V

#### 491 (1-4) Senior Paper F, S

#### 497 (1-10) Internship

An applied work and learning experience. The student will provide a written internship report on professional practicum and the work supervisor will be consulted on how much the student has accomplished.

Pre: Consent On Demand

#### 499 (1-3) Individual Study

An assignment that is tailored to individual needs of a student. An arrangement is made that the student works on a project (term paper, readings, mapping, field investigation, GIS, or related topics).

Pre: Consent On Demand

## Geology

*College of Science, Engineering and Technology*

*Department Chemistry & Geology*

242 Trafton Science Center N • 507-389-1963

Chair: Jeffrey R. Pribyl

Bryce Hoppie, Dean Moosavi

Geology is the study of the earth. It concerns itself with the materials that constitute the earth, their disposition and structure, the processes at work on and within the earth, and both the physical and biological history of the earth.

### GEOLOGY MINOR

#### Required for Minor (Core, 12 credits):

GEOLOG 121	Physical Geology (4)
GEOLOG 122	Earth History (4)
GEOLOG 201	Elements of Mineralogy (4)

#### Required Electives for Minor (6-7 credits):

Choose a minimum of 6 credits from the following:

GEOLOG 202	GEOLOG 270	GEOLOG 350
GEOLOG 370	GEOLOG 450	GEOLOG 401
GEOLOG 499		

### COURSE DESCRIPTIONS

#### 100 (3) Our Geologic Environment

Earthquakes, volcanic eruptions, and flooding are three examples of naturally recurring events on the Earth that ultimately influence all of our lives. This course introduces the physical features and processes of the Earth that control these events. The course has a laboratory component and is designed for students not majoring in the natural sciences. F, S

#### 121 (4) Physical Geology

Physical geology is the study of how the earth works. From mountain building to soil erosion, this course provides an introduction to all the main areas of geologic study. Lecture discussions and laboratory exercises are designed for students seeking a major or minor in one of the natural sciences. F

#### 122 (4) Earth History

An examination of the development and evolution of life on earth. In addition to reviewing the range of life forms and global climates existing on earth during various times in its geologic past, we will also look at how global industrialization could lead to the earth's next period of mass extinction. Weekly laboratory assignments help illustrate principles discussed in lectures. S

#### 201 (4) Elements of Mineralogy

Examination of the elemental composition and crystal structure of various common minerals. Laboratory time is spent practicing techniques of identifying crystals and minerals. The importance and occurrence of many economic minerals is also covered thoroughly in this course. Pre: GEOLOG 100 or 121 F

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## Geology

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### 202 (3) Lithology

Similar in scope to GEOL 201; however, this course reviews the identification, classification, occurrence, and uses of the earth's rocks. Laboratory assignments will focus on the recognition of globally significant rock groups and those of particular significance to the upper Midwest.

Pre: GEOL 201 V

### 270 (4) Structural Geology

Study of faults, folds, and fractures in the earth's crust, and the forces and movements which cause their formation.

Pre: GEOL 121 ALT-S

### 305 (2) Earth Science for Elementary Educators

An integrated, multi-disciplinary study of the Earth and the solar system. The course establishes basic concepts of astronomy, physical geography, and geology to give students a thorough understanding of the Earth and its place in the solar system. Learning outcomes partially fulfill licensure requirements for elementary educators. This course is focused on content.

Pre: BIOL 100, PHYS 101 F, S

### 310 (3) Earth and Space Systems

An integrated, multi-disciplinary study of the Earth and the solar system. The course builds on basic concepts of astronomy, chemistry, and geology to give students an enhanced understanding of the nature and relationships among the forces that control the Earth's evolution. Learning outcomes partially fulfill licensure requirements for secondary science educators.

Pre: AST 101, CHEM 201, GEOL 121, PHYS 211 F

### 350 (4) Environmental Geology

The application of geologic data and principles to problems created by human occupancy and use of the physical environment. Lecture and laboratory topics include soil classification and conservation, hazardous waste site evaluation and remediation, and living with geologic hazards.

Pre: GEOL 121 ALT-S

### 351 (2) Engineering Geology

This course focuses on the application of geologic data and principles created by human occupancy and use of the physical environment. This course meets concurrently with GEOL 350 Environmental Geology, through the last eight weeks of the semester. It is intended for civil engineering students that previously completed Geotechnical Engineering, CIVE 360.

Pre: GEOL 121, CIVE 360, or instructor permission ALT-S

### 370 (2) Geotectonics

Expanded discussions of several topics introduced in Physical Geology and Structural Geology. Topics include plate tectonics, deep earth structure, seismicity, mountain building, and continental growth.

Pre: GEOL 121 and 270 V

### 401 (1-3) Field Studies

This course is devoted to the study and practice of geological field investigations. Students will first learn basic

field investigative methods. Students will then be appropriately versed in the geological history and importance of a region selected for in-depth study. Finally, students will participate in a field trip to a regional site of geologic importance over an extended weekend (4-6 days). Potential study sites may include Minnesota's North Shore and Iron Range, the Badlands and Black Hills of South Dakota, the Ozarks, or the Rocky Mountains.

Pre: GEOL 100 or 121 and 122 V

### 450 (3) Hydrogeology

This course introduces physical and chemical studies of hydrogeology. The main areas of discussion will include the physical and chemical attributes of aquifers, movement of ground-water and solute through soils and rocks, and reactions between earth materials and pollutants in ground-water systems. The class includes extensive use of MODFLOW and MT3D, the two most commonly used groundwater modeling programs currently available.

PRE: CHEM 201, GEOL 121 ALT-S

### 479 (3) Teaching Earth Sciences

Material and methods of earth science study directed toward future teachers of students in junior high and high schools.

Pre: GEOL 121, GEOG 217 V

### 490 (1-4) Workshop

### 499 (1-5) Individual Study

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## German

*College of Arts & Humanities*

*Department of Modern Languages*

227 Armstrong Hall • 507-389-2116

Web site: [www.mnsu.edu/dept/modernlangWelcome.html](http://www.mnsu.edu/dept/modernlangWelcome.html)

Chair: Kimberly Contag

Birgitta Hendrickson, Patricia Wilcox Peterson, Edith White

Education in the German language provides insight into the literature and culture of German-speaking countries. It also gives students a knowledge of language that enables them to work and travel in areas where the target language is used.

**Admission to Major** is granted by the department.

Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

A minimum GPA of 2.5 is required in all German courses.

Contact the department for application procedures.

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### GERMAN BA, BS

#### **Required for Major: (36 credits)**

Elementary German or other proof of skill is needed.

The intermediate sequence counts toward the major.

#### **Required for Major (Core, 28 credits):**

GER 340 Topics in Language (1-4)

- GER 341 Composition and Conversation I (4)  
 GER 342 Selected Readings (1-4)  
 GER 343 German Civilization (1-4)  
 GER 441 Composition and Conversation II (4)  
 GER 442 German Literature (1-4)  
 GER 445 German Linguistics (1-4)

#### Electives (8)

**Required Minor: Yes. Any.**

#### GERMAN BS, TEACHING

**The German BS, Teaching is temporarily suspended.**

#### GERMAN MINOR

**Required for Minor:** Elementary German or other proof of skill is needed. The intermediate sequence counts toward the minor.

#### Required for Minor (Core, 16 credits):

Choose 24 credits of German courses, including at least 14 credits at the upper-division level. Eight of the upper division credits must be in skills courses selected from the list below:

- GER 340 Topics in Language (1-4)  
 GER 341 Composition and Conversation I (4)  
 GER 342 Selected Readings (1-4)  
 GER 343 German Civilization (1-4)

#### Electives (8)

#### POLICIES/INFORMATION

**GPA Policy.** A grade of C or better must be earned for major or minor credit.

**P/N Grading Policy.** Work done for a major or minor must be done for a letter grade above the second-year level. A grade of P must be earned for major or minor credit in all work done on a P/N basis.

**Proficiency Policies.** Students with high school language experience may take the CLEP test for a maximum of 12 credits. Students who wish to receive credit by examination may take tests to evaluate their proficiency. Students may not take a proficiency test for a course in which they are enrolled. The department reserves the right to deny admission to courses for those students whom a faculty member determines to have mastered the material already.

**Fulfilling B.A. Language Requirement.** Students who wish to validate the B.A. language requirement may take a language competency test from the Department of Modern Languages at no cost. If they are evaluated as being proficient, they need not take any more language courses, but they receive no credit. Students will not be considered exempt from the language requirement merely because they have taken two years of high school language.

Students may receive elective credit for fewer than 8 credits of an elementary language sequence, if these are satisfactorily completed. Such credits do not apply toward the 8 credit requirement for the B.A. degree.

**Residency Requirement.** Transfer credits will be applied only if they are the equivalent of work offered by the Department of Modern Languages for the major or minor in that language. In addition, a minimum of work must be taken at Minnesota State University, Mankato as follows.

Major: a minimum of three upper division courses other than Independent or Individual Study, for a total of at least 8 credits. At least two of these courses must be at the 400 level.

Minor: a minimum of two upper division courses other than Independent or Individual Study, for a total of at least six credits.

Courses not required for a student's specific baccalaureate degree should be chosen according to these general guidelines:

- BA: Emphasis on literature in upper-division courses; students will most likely pursue their education beyond the baccalaureate level.
- BS: Emphasis on the ability to communicate in the language; presupposes knowledge of culture and civilization; students frequently have career goals in other disciplines for which a language is either required or recommended.
- BS (teaching): Emphasis on communication (four skills plus culture and language analysis).

#### COURSE DESCRIPTIONS

##### 101 (4) Elementary German I

Introduction to German for students with little or no language experience.

##### 102 (4) Elementary German II

Pre: GER 101 or equivalent

##### 201 (4) Intermediate German I

A review of German structure and its application to reading, conversation, and composition.

Pre: GER 102 or equivalent

##### 202 (4) Intermediate German II

Pre: GER 201 or equivalent

##### 293 (1-4) Supervised Foreign Study: Intermediate

##### 299 (1-4) Independent Study

Pre: as appropriate for level of project

##### 340 (1-4) Topics in Language

Topics will vary and course and course may be repeated for credit. Language topics include pronunciation and intonation, advanced grammar, etc. The focus is on advanced oral or written communication.

Pre: Two years of university level German or equivalent.

##### 341 (4) Composition and Conversation

Intensive practice in speaking and writing for students who have completed the intermediate sequence or equivalent.

Pre: completion of 202 or equivalent.

##### 342 (1-4) Selected Readings

Discussion and analysis of major themes and movements



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## German

based on selected readings from representative authors from the German-speaking world.

Pre: Completion of 202 or equivalent

### 343 (1-4) German Civilization

Major cultural and historical aspects of German from ancient times to the present.

Pre: Completion of 202 or equivalent

### 393 (1-6) Supervised Foreign Study

Study for credit must be approved by the department prior to departure.

Pre: Intermediate Sequence

### 441 (4) Conversation and Composition

Intensive practice in speaking and writing German.

Pre: Completion of at least one 300 level course in German.

### 442 (1-4) German Literature

Topics vary and course may be repeated if a different topic/genre is the focus. Major writers from German-speaking countries. Genres include novel, poetry, theatre, short story, etc.

Pre: Completion of readings 302 or equivalent

### 445 (1-4) Topics in German Linguistics

Topics may vary. Course may be repeated for credit. Discussion and analysis of German phonetics and syntax and historical linguistics, for example.

Pre: Completion of a least one 300 level German course.

### 493 (1-6) Supervised Study in Foreign Countries

Study for credit must be arranged by contract prior to departure.

Pre: Experience appropriate for level of credit

### 497 (1-6) Internship

Pre: Experience appropriate to project

### 499 (1-4) Individual Study

Pre: As appropriate for level of project

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## Gerontology

*College of Social & Behavioral Sciences  
Gerontology Program*

335 Trafton Center N • 507-389-1563

Web site: [www.mnsu.edu/dept/gero](http://www.mnsu.edu/dept/gero)

Director: Kathryn "Jay" Elliott

Other Faculty: Michael Bentley (Biological Sciences), Mary Bliesmer (Nursing), Michael Fatis (Psychology), Marilyn Frank (Social Work), Rosemary Krawczyk (Psychology), Norma Krumwiede (Nursing), Shirley Murray (Social Work), Bikash Nandy (Health Science), Carol Perkins (Women's Studies), Charles Piehl (History), Carolyn Shrewsbury (Political Science), Harold Slobof (Health Science), Regina Smith (Nursing), Mary Frances Visser (Human Performance), Bob Widner (Psychology), Jim Wise (Recreation, Parks and Leisure Services)

The field of Gerontology focuses upon the scientific study of the biological, psychological and social aspects of hu-

man aging and the application of this knowledge in the service of older adults. The Gerontology Program coordinates the delivery of the gerontology curriculum and conducts programs including the undergraduate Minor in Gerontology, the Master of Science in Gerontology, the Graduate Certificate of Study in Gerontology, and an approved course of study for nursing home administration licensure. The Gerontology Program also cooperates with the MSU Center on Aging and the Minnesota Area Geriatric Education Center South on continuing education, research and resource development. Minnesota State University, Mankato is a member of the Association for Gerontology in Higher Education. **All programs require registration with the Gerontology Program director.**

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### GERONTOLOGY MINOR

**Required Total: 18 credits**

**\*Appropriate substitutions for required core or elective courses can be negotiated with the Director of the Gerontology Program.**

- I. All Gerontology minors must take GERO 200 Aging: Interdisciplinary Perspectives (3)
- II. Minors must also take 3 out of the following 4 core categories (9 core credits):

SOC	404	Sociology of Aging (3)
PSYC	466	Psychology of Aging (3)
HLTH	455	Health and Aging (3) <b>or</b>
BIOL	417	Biology of Aging and Chronic Diseases
POL	464	Aging Policy (3)
- III. Minors must also complete at least 6 credits of electives, to be chosen from among the list of aging-related, elective courses already approved by the Gerontology Program. **Any core course that a student does not count as part of his/her 3 core categories may also be taken and counted as an acceptable elective.** A 3-credit aging-related internship can be done as an elective as well. Additionally, students who complete an internship for their major with an older population can use that internship to satisfy both the requirement for their major and for 3 elective credits in the Gerontology minor.

### Approved Electives for Minor:

To be selected from Gerontology Courses—specific courses offered by particular department and/or courses offered by the Gerontology Program.

Elective courses include:

- |      |     |   |
|------|-----|---|
| GERO | 480 | Nursing Home Administration (3)                               |
| GERO | 485 | Topics in Gerontology (1-3)                                   |
| GERO | 499 | Individual Study in Gerontology (1-4)                         |
| ANTH | 436 | Anthropology of Aging (3)                                     |
| FCS  | 474 | Resource Management for Families and Special Needs People (4) |
| HLTH | 441 | Death Education (3)   |
| RPLS | 482 | Leisure Needs of the Aging (3)                                |
| SOWK | 419 | Social Work and Aging (3)                                     |
| WOST | 445 | Women and Aging (3)   |

## POLICIES/INFORMATION

All Gerontology **must** register with the gerontology program director at the beginning of their program.

**GPA Policy.** Gerontology minors are urged to maintain a 3.0 or better GPA to maximize their options for professional employment and graduate study.

**P/N Grading Policy.** All coursework for the Minor, with the exception of the internship and the practicum, must be taken for a letter grade.

**Nursing Home Administration Licensure.** This is an approved program of specific coursework and practicum that fulfills educational requirements for a Minnesota nursing home administrator license. It may be pursued at either the undergraduate or graduate level either as part of degrees or in addition to them. Students seeking licensure **must** register with the gerontology program director at the beginning of their program, and **must** contact the Minnesota State Board of Examiners for Nursing Home Administrators, 2829 University Avenue S.E., Suite 440, Minneapolis, MN 55414-3245; telephone 612-617-2117. Web site: [www.benha.state.mn.us](http://www.benha.state.mn.us)

## COURSE DESCRIPTIONS

### 200 (3) Aging: Interdisciplinary Perspectives

Introduction to human aging. Overview of social, psychological, and physical changes and social policy considerations. F, S

### 480 (3) Nursing Home Administration

Issues and trends, programs and services, funding mechanisms and regulations. Meets state educational requirements for specific content areas. S

### 485 (1-3) Topics in Gerontology

Topics vary as announced in class schedule. May be retaken for credit if topic is different. V

### 497 (1-6) Internship

Pre: Consent F, S

### 498 (1-6) Practicum in Nursing Home Administration

For students following plan of study for nursing home administration licensure only.

Pre: by application and Consent only F, S

### 499 (1-4) Individual Study in Gerontology F, S

## Health Science

*College of Allied Health & Nursing*  
*Department of Health Science*  
 213 Highland Center N • 507-389-1527  
 Web site: [www.mnsu.edu/dept/health/](http://www.mnsu.edu/dept/health/)

Chair: Judith K. Luebke

Steve Bohnenblust, Dawn Larsen, Linda Marshall,  
 Marge Murray-Davis, Bikash Nandy, John A. Romas,  
 Harold Slobof, Mark Windschitl

The school and community health programs prepare health professionals with expertise in health promotion and disease prevention for employment in public health and community health agencies, health care facilities, business and industry, and schools.

**Admission to Major** is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.00 (C).
- completion of HLTH 260.

Contact the department for application procedures.

## COMMUNITY HEALTH BS

### Required for Major (Core, 35 credits):

HLTH	260	Introduction to Health Education (4)
HLTH	361	Health Communications (3)
HLTH	454	Chronic and Infectious Diseases (3)
HLTH	460	Introduction to Epidemiology (3)
HLTH	475	Biostatistics (3)
HLTH	480	Community and Program Development for Health (4)
HLTH	496	Internship in Community Health (8)
BIOL	230	Human Physiology (4)
FCS	240	Nutrition I (3)

### Required Electives for Major (15 credits):

15 credits of Health Science electives. Determined in consultation with academic advisor. HLTH 101 Health and Environment is not a Health Science elective.

### Electives:

HLTH	210	HLTH	212	HLTH	225
HLTH	310	HLTH	311	HLTH	315
HLTH	321	HLTH	400	HLTH	410
HLTH	441	HLTH	449	HLTH	450
HLTH	451	HLTH	455	HLTH	456
HLTH	459	HLTH	465	HLTH	469
HLTH	488				

### Required Minor: none

## SCHOOL HEALTH BS, TEACHING

### Required General Education (Prerequisites, 9-10 credits):

HLTH	101	Health and the Environment (3)
SPEE	102	Public Speaking (3)
CHEM	xxx	Elective (3-4)

### Required for Major (8 credits):

BIOL	100	Our Natural World (4)
BIOL	220	Human Anatomy (4)

### Required for Major (Core, 27 credits):

HLTH	260	Introduction to Health Education (4)
HLTH	310	Drug Education (3)
HLTH	311	Family Life and Sex Education (3)
HLTH	340	Health Teaching Methods (5)
HLTH	410	Current Health Issues (3)
HLTH	454	Chronic and Infectious Diseases (3)
HLTH	475	Biostatistics (3)
FCS	240	Nutrition I (3)

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## Health Science

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### Required Electives (18 credits):

Choose 9 credits from the following:

HLTH 212	HLTH 361	HLTH 400
HLTH 450	HLTH 451	HLTH 460

Choose 9 credits from the following or any from the list above.

BIOL 230	HLTH 210	HLTH 315
HLTH 440	HLTH 441	HLTH 455
HLTH 459	HLTH 465	PSYC 429

### Required for Major (Professional Education, 30 credits):

See the SECONDARY EDUCATION section for admission requirements to Professional Education and a list of required professional education courses.

### Minor Required: None

### COMMUNITY HEALTH MINOR

#### Required for Minor (Core, 21 credits):

HLTH 260	Introduction to Health Education (4)
HLTH 361	Health Communications (3)
HLTH 454	Chronic and Infectious Disease (3)
HLTH 460	Introduction to Epidemiology (3)
HLTH 480	Community and Program Development for Health (4)
HLTH 496	Internship in Community Health (4)

#### Required Electives Minor (3 credits):

Choose a minimum of 3 Health Science credits

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### POLICIES/INFORMATION

**GPA Policy.** A 2.0 GPA is required for admission to the college and the department majors.

**P/N Grading Policy.** All major courses must be taken for grade.

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### COURSE DESCRIPTIONS

#### 101 (3) Health and the Environment

This course is designed to introduce the wellness concept, encouraging development of physical, mental, social and environmental health of the individual. The course ultimately fosters decision-making through a variety of instructional strategies. F, S

#### 210 (3) First Aid and CPR

Provides the knowledge and skills necessary in an emergency to help sustain life, reduce pain, and minimize the consequences of injury or sudden illness. Includes First Aid certification for the non-professional and all aspects of CPR for the non-professional and professional. F, S

#### 212 (3) Consumer Health Issues

This a course designed to examine health products, services, and information from the consumer's perspective. Emphasis will be placed on those factors that influence and ultimately determine which products, services, and information sources that you will either accept or reject. F, S

#### 215 (1) CPR Basic Rescuer

Certification and recertification in all aspects of CPR for the non-professional and professional. Emphasizes recognition and care for cardiac and respiratory emergencies; special rescue situations, minimizing risk of disease transmission, use of pocket and bag-valve resuscitation devices, and two rescuer CPR. V

#### 225 (3) Introduction to Alcohol and Drug Studies

This course provides information on a variety of topics related to chemical use, abuse and dependency. Students will be exposed to chemical dependency counseling, assessment and intervention techniques. Different drug classifications will be discussed in detail. Counselor core functions and ethics will be discussed also. F, S

#### 260 (4) Introduction to Health Education

Health 260 is required of all Health Science majors and minors. This is the foundation class for the professional preparation of health educators. The course explores the knowledge, skills, and competencies of health educators in various settings. Health 260 is a prerequisite for all 300 and 400 level School and Community Health required courses. F, S

#### 310 (3) Drug Education

Addresses drugs and drug use from psychological, behavioral, pharmacological, historical, legal and clinical perspectives - while examining the effects of drug use on personal health and social functioning. F, S

#### 311 (3) Family Life and Sex Education

Explores biological, physiological, and sociological perspectives of human sexuality. The course examines personal and family relationships and addresses family life and sex education teaching methods for school and community settings. S

#### 315 (3) Holistic Health and Wellness

This course presents a study of the essential nature and characteristics of total health. The course explores dimensions of mental, physical, social, and spiritual well-being. Various approaches to holistic health and wellness are considered. ALT-F

#### 321 (3) Medical Terminology

For health care personnel, emphasis on spelling, pronunciation and meaning. F, S

#### 361 (3) Health Communications

Health Communications focuses upon the development of skills necessary to communicate technical and practical information for the health professional. Theory and practice of written, verbal and electronic communication methods will be addressed.

Pre: HLTH 260

F, S

#### 400 (3) Women's Health

This course explores current issues, controversies and concerns affecting women's health. Relationships between social, cultural, psychological, environmental and physical factors of women's health status are examined. S

**410 (3) Current Health Issues**

An in-depth review of significant current health concerns and controversies in health science using the elements of reasoning as the framework for critiquing the issues.

Pre: HLTH 475 S

**420 (5) Health Teaching Methods**

Overview of methodology and materials used in the school health setting. Review curriculum development, teaching strategies and program administration. Includes the preparation and presentation of lessons.

Pre: HLTH 260 S

**440 (2) Teaching First Aid and CPR**

American Red Cross instructor certification for Community First Aid and Safety courses. Includes review of course contents, preparation in teaching principles, methods, strategies, course materials and their use, clerical duties, and teaching experience.

Pre: HLTH 210 V

**441 (3) Death Education**

Explores the relationship of death concerns to the process of meaningful living. Uses a variety of learning strategies to examine death attitudes, values and related behaviors.

F

**449 (3) Clinical Health Education**

Course is designed for health educators preparing for employment in a medical/health care setting and includes an overview of hospital-clinic based educational program. Patient interviewing and counseling skills are presented for professional and paraprofessional health care personnel. Course emphasis is on developing and preparing a teaching module in patient education.

Pre: HLTH 454 ALT-F

**450 (3) Environmental Health**

To promote identification and analysis of environmental influences upon health status. Health concerns related to residential, occupational, and other environments are explored. Problems pertaining to air, water, solid waste, housing, land use, toxic waste, and sanitation are addressed.

ALT-F

**451 (3) Stress and Health**

Emphasis is on recognition of, and enhancing awareness about, how stress affects human health and performance. Stress management techniques such as relaxation, effective communication, cognitive-behavioral approaches, eating behaviors, regular exercise, and time management are explored.

S

**454 (3) Chronic and Infectious Diseases**

The purpose of this course is to develop the knowledge and understanding of the causes, symptoms and methods of controlling and preventing chronic and infectious diseases. Primary and secondary prevention strategies will be identified. Emphasis will be placed on those behaviors that foster and those that hinder well-being.

Pre: HLTH 260 F, S

**455 (3) Health and Aging**

This course investigates the physical and mental health concerns of the aging process. Explores specific health problems confronting older persons, and examines preventive health behaviors and health maintenance practices.

F

**456 (3) Assessment of Chemical Dependency**

This course is designed to provide students with practical knowledge and application techniques in assessing an individual with a chemical use/dependency problem. Various assessment techniques will be presented and discussed as to appropriate utilization. This course meets the criteria for Rule 25 training in Chemical Dependency Assessment.

Pre: HLTH 225 S

**459 (1-3) Critical Topics in Health**

An in-depth study of specific topics of current interest in the Health Science discipline.

V

**460 (3) Introduction to Epidemiology**

Examines the philosophy and rationale of current epidemiological practice. Requires the application of epidemiological techniques to selected health concerns. Explores the interaction of agent, host and environment with the emphasis on application of principles of prevention.

F, S

**465 (3) Health Care Delivery in the United States**

An examination of the system of delivery of health care in the United States from a historical, social, political, and economic perspective.

V

**467 (3) Public Health Law**

An examination of the judicial system and the development, enactment and enforcement of laws as they relate to the public's health.

V

**469 (3) Chemical Dependency: Dual Diagnosis**

The focus of this course is on assessment and treatment of persons with coexisting mental disorders as well as chemical dependency.

Pre: HLTH 225 F

**475 (3) Biostatistics**

Introduction to statistical analysis as applied to the health sciences. Examines concepts and methods of statistical procedures applied to health problems and issues.

F, S

**480 (4) Community and Program Development for Health**

Focuses upon knowledge and skills necessary for community organization and program development. The course identifies and explores methods and techniques needed for organizing a community for implementing health promotion programs. Principles of program planning, implementation and evaluation are presented.

Pre: HLTH 260, 361, 460 F

**488 (3) Worksite Health Promotion**

The course examines approaches to promote health and prevent disease and injury, and explores other health related issues at the workplace. Assessment, planning, imple-

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## Health Science

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mentation and evaluation strategies are addressed. Model programs are reviewed and analyzed. ALT-F

### 490 (1-4) Workshop

Intensive educational experience on selected topics related to skill development, content update, or material development. Typically offered in a concentrated format. V

### 496 (1-8) Internship in Community Health

A concentrated pre-professional work experience for those students preparing for a career in community health. Student must schedule placement one semester in advance. Pre: Completion of all Community Health core courses F, S

### 497 (1-12) Internship: Alcohol and Drug Studies

A concentrated pre-professional experience for those preparing for a career in chemical dependency counseling. All course work must be completed prior to placement. Student must schedule placement one semester in advance. Pre: Course work completed F, S

### 499 (1-6) Individual Study

An in-depth study on a topic of particular interest to the student and project supervisor. F, S

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## History

*College of Social & Behavioral Sciences*

*Department of History*

110 Armstrong Hall • 507-389-1618

Web site: [www.mnsu.edu/dept/history/](http://www.mnsu.edu/dept/history/)

Chair: Margaretta S. Handke

Melodie J. Andrews, Erwin P. Grieshaber, Richard C. Hall, Charles K. Piehl, Donald H. Strasser, Larry L. Witherell

The study of history is the attempt to understand and interpret past human societies. It provides both the joy and anguish of contemplating collective experiences, and presents insights that could produce a better future for the human race. History also opens a panorama of enormous variety in human experiences, values, and customs, which provide enjoyment and from which society can also learn wisdom, mutual respect, and tolerance.

**Admission to Major.** Admission to major is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

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### HISTORY BA, BS

#### Required for Major (Core, 17 credits):

Choose one survey sequence:

- |          |  |
|----------|--|
| HIST 170 | Ancient World Civilization to 1500 (4)           |
| HIST 171 | World Civilization 1500 to Present (4) <b>or</b> |
| HIST 190 | United States to 1877 (4)                        |
| HIST 191 | United States since 1877 (4)                     |

Plus two methodology courses and one Capstone senior paper:

- |          |                                     |
|----------|-------------------------------------|
| HIST 260 | Nature of History (4)               |
| HIST 399 | Historical Research and Writing (3) |
| HIST 495 | Senior Paper (2)                    |

#### Required Electives for Major (Restricted, 9-12 credits)

Choose 9-12 credits of history electives at the 3/400 level as follows:

- One U.S. course
- One European course
- One course from either Africa, Asia, Middle East or Latin America

#### Required Electives for Major (7-10 credits)

Choose 7-10 credits at the 3/400 level.

- |          |          |
|----------|----------|
| HIST xxx | HIST xxx |
|----------|----------|

#### Required for Bachelor of Arts (BA) degree ONLY:

Language (8)

#### Required Minor: Yes. Any.

#### HISTORY MINOR

#### Required for Minor (Core, 18 credits):

- |          |                       |
|----------|-----------------------|
| HIST 260 | Nature of History (4) |
|----------|-----------------------|

Choose a minimum of 14 credits, at least 9 credits at the 3/400 level:

- |            |                       |
|------------|-----------------------|
| HIST xxx   | HIST xxx              |
| HIST 3/400 | HIST 3/400 HIST 3/400 |

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### POLICIES/INFORMATION

**GPA Policy.** A minimum cumulative grade-point average of 2.0 is required in the major.

**Pass/No Credit Policy.** Undergraduate history courses may be taken either for P/N or letter grading except HIST 490 (workshops), HIST 497(1-6 credits), HIST 498(1-6 credits) and HIST 499(1-3 credits), which are available only on P/N grading. However, majors and minors in history and majors in social studies (history core) must take all history courses, other than those enumerated, for a letter grade. No more than one-fourth of the credits in a history major or minor may be taken as P/N.

**Transfer Policy.** Transfer students should come to the History Department to have their transfer credits reviewed prior to registration for classes. All transfer students are required to take at least 9 semester credits at the Minnesota State University, Mankato History Department.

In order to provide broad preparation for graduate study, history majors of superior ability may read for honors in three different areas [see HIST 390(1)-392(1)]. To be eligible, a student must have completed at least 14 credits of history courses and have earned a grade-point average of 3.5 in history. The student may enroll for one honors course a semester. Honors credit may be counted for the history major and social studies (history core). Students who successfully complete these three courses with a grade-point average of 3.5 for all history courses (and who have met the other degree re-



quirements) will be eligible for graduation “with distinction in history.”

For Scandinavian Studies, students may receive history credit for courses in Scandinavian Studies by enrolling in HIST 424(4).

Students interested in teaching history should see the Social Studies section for information on the major in Social Studies with a History Concentration BS, Teaching.

## COURSE DESCRIPTIONS

### 150 (1-3) Historical Perspectives

Selected topics in United States or World History depending on interests of the instructor. V

### 151 (3) African-American History

A survey of African-American history from African origins to the present. V

### 153 (3) War and Peace in the 20th Century

An examination of the cause and consequences of war in the twentieth century with focus on World War I, World War II, and the Cold War. V

### 154 (3) Minnesota: People and the Land

Survey of Minnesota history with emphasis on the interrelationships of the physical environment and various peoples. V

### 155 (3) History of the Family in America

This course is designed to provide an overview and analysis of the historical experiences of the family in the United States from earliest settlement to the present in order to aid students in understanding the contemporary situation of the family in American society. V

### 156 (3) American Automotive History

Introduction to United States automotive development from the late 19th century to the present. V

### 157 (3) American Aviation History

Introduction to United States aviation development from the Wright brothers to the present. V

### 158 (3) Freedom and Authority

This course explores notions of freedom and authority across cultures and through time. By using political writings, literary works and film, the course examines issues including the nature and limits of legitimate authority, the nature and sources of freedom, limits to freedom, and the role of personal choice and conscience.

### 170 (4) Ancient World Civilization to 1500

A history of the physical, political, cultural, social, and economic foundations of world civilizations to 1500. F, S

### 171 (4) World Civilization, 1500-Present

Review of major changes in World Civilizations since 1500. F, S

### 180 (4) European History to 1648

A survey of European civilization from Egypt to the end of the Thirty Years War. F, S

### 181 (4) European History: 1648 to the Present

A survey of European history from the end of the Thirty Years War to the present. F, S

### 190 (4) United States to 1877

This course is designed to provide an overview of America's political, social, economic, and cultural development from earliest colonization to 1877. F, S

### 191 (4) United States since 1877

A survey of American History from the end of Reconstruction to the present with a special emphasis on political and social developments. F, S

### 199 (1-3) Clep History

### 260 (4) Nature of History

A course in historical interpretations and historical methodology which identifies the challenges facing the historian and analyzes how major historians dealt with them. F, S

### 301 (4) Readings in United States History

Review of United States history through analysis and discussion of selected primary and secondary readings. F, S

### 302 (4) Readings in World History

Review of World History as a field of study. F, S

### 390 (1) Readings for Honors: United States History

Pre: 14 semester credits of History with minimum GPA of 3.5 F, S

### 391 (1) Readings for Honors: European History

Pre: 14 semester credits of History with minimum GPA of 3.5 F, S

### 392 (1) Readings for Honors: World History

Pre: 14 semester credits of History with minimum GPA of 3.5 F, S

### 399 (3) Historical Research and Writing

Research methodologies and nature of historical writing. F, S

### 401 (4) Classical World of Greece and Rome

The history of Greece and Rome stressing political, social and economic institutions and cultural and intellectual achievements. V

### 402 (4) Foundations of Judaism, Christianity, and Islam

A history of western monotheistic religions and their interactions with the secular world and each other from the beginnings of Judaism to the Crusades. V

### 403 (4) The Middle Ages

A history of the Middle Ages stressing political, social and economic interactions and cultural achievements. V

### 406 (3) Renaissance and Reformation

Intellectual, social and cultural developments in Western Europe, 1300-1600. V

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## History

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### **407 (3) Scientific Revolution and Enlightenment**

Europe during the 17th and 18th centuries when science and reason replaced religion as the intellectual authority.

V

### **412 (4) Modern Germany Since 1500**

Review of German history from the Reformation and Thirty Years War to the present, including such topics as Rise of Prussia, Revolution of 1848, Bismarck and the formation of a German Empire, World War I, Weimar Republic and the rise of Hitler, World War II and Germany since 1945.

V

### **414 (4) Early England to 1603**

England from ancient times to the death of Elizabeth I.

V

### **415 (4) England Since 1603**

Political, social and economic development of England and Great Britain since the death of Elizabeth I.

V

### **419 (4) France Since the Revolution in 1789**

Review of French history from the Revolution of 1789 to the present, including such topics as origins and course of the Revolution, Napoleon, Louis XVIII to Third Republic, World War I, World War II and France since 1945.

V

### **421 (4) Modern Russia**

A history of Russia and surrounding areas from the fall of Tsarism in 1917 to the modern era.

V

### **424 (4) Scandinavian History**

Political, economic, social, cultural, and emigration-immigration history of the Scandinavian countries, including major themes in the mass migration and history of Scandinavians in America. Emphasis on the period, 1500-present.

V

### **427 (4) Eastern Europe**

A history of Eastern Europe from the middle ages to the present.

V

### **430 (1-4) United States: Selected Topics**

This seminar course will deal with a specific aspect of United States history as announced by the departmental course description.

V

### **431 (1-4) European History: Selected Topics**

This seminar course will deal with a specific aspect of European history as announced by the departmental course description.

V

### **432 (1-4) World History: Selected Topics**

This seminar course will deal with a specific aspect of World History as announced by the departmental course description.

V

### **434 (4) Modern East Asian History**

A comparative history of the rise of the Chinese and Japanese nations from the 1840's to the present.

V

### **437 (4) African History**

Review of African history from the earliest civilization of Africa to the present, including such topics as Empires of West Africa and East Africa, spread of Islam in Africa,

Bantu migrations, European contact and slave trade, European Colonization and independent Africa.

V

### **442 (4) History of Latin America**

Review of Latin American history from Ancient American Civilizations to the present.

F

### **450 (3) Minnesota to 1880**

Survey of Minnesota's frontier history with emphasis on Indian-white contacts, exploration and settlement.

V

### **451 (3) Minnesota Since 1880**

Modern political, economic and social history of the state, emphasizing both its uniqueness and its relationship to national and regional developments.

V

### **454 (4) Early America to 1763**

This course will examine America's political, social, economic, and cultural development from the earliest settlement of the continent by indigenous peoples to 1763, when provincial Americans began to demand more than token equality in the British Empire.

V

### **455 (4) Revolutionary and Early National America 1763-1820**

This course will examine the social, economic, ideological, political, diplomatic, and military experiences of the United States between 1763 and 1820, in order to understand the creation of the American political nation and the culture which developed within it.

V

### **459 (4) Civil War and Rise of Industrialization**

Examines issues of slavery and conflict between the North and the South leading up to, during, and after the Civil War, and the rise of a socially and culturally diverse manufacturing society by the 1880's.

S

### **462 (3) Twentieth Century United States to 1945**

Reform/domestic themes and U.S. foreign policies during the Progressive Era, the "Roaring 20's," the Great Depression and the New Deal, and the two world wars.

V

### **463 (3) Contemporary U.S., 1945-Present**

Social, political and foreign affairs since World War II.

F

### **470 (4) American Frontier**

Occupation of the area between the Mississippi and the Pacific from Spanish exploration to the late 19th century.

V

### **475 (3) The American South**

A course which attempts to identify the major themes in southern history and tackles the question whether the South has been un-American or ultra-American.

V

### **477 (3) Advanced African-American History**

A course which deals with the main themes in African-American history and their interpretations.

V

### **483 (3) Intellectual and Cultural History**

Topics in intellectual history or popular and traditional culture.

V

### **484 (4) Social and Labor History**

An examination of the history of labor and the emergence of social welfare within the context of the mod-

ernization of western society and the diversity of the United States. V

#### 487 (4) United States Women's History

This course is designed to provide a survey and analysis of the historical experiences of women in the United States from earliest settlement by indigenous peoples to the present in order to aid students in understanding the contemporary situation of women in American society. V

#### 490 (1-4) Workshops

Specific titles to be announced in departmental course descriptions. P/N only. F, S

#### 495 (2) Senior Paper

Capstone writing project on an individually selected topic. Advisor's permission required. Pre: HIST 399 F, S

#### 497 (1-6) Internship

Practical work experience in an historical agency. P/N only. F, S

#### 498 (1-6) Internship

Practical work experience in an historical agency. P/N only. F, S

#### 499 (1-3) Individual Study

Advanced independent study and research. P/N only. F, S

## Honors

*Honors Program*

203 Morris Hall • 507-389-5056

Director: Suzanne Bunkers

E-mail: [suzanne.bunkers@mnsu.edu](mailto:suzanne.bunkers@mnsu.edu)

Web site: [www.intech.mnsu.edu/honors/](http://www.intech.mnsu.edu/honors/)

Faculty are chosen from all disciplines to teach honors seminars, topics courses, and general education courses.

The mission of the Honors Program at Minnesota State University, Mankato, is to provide a challenging interdisciplinary program of study for a highly motivated group of undergraduates and to function as an alternative to the traditional general education curriculum. By providing opportunities for students to meet weekly with professors in small, personalized classroom settings, the Honors Program allows participants to become part of a community of scholars that includes experienced faculty who share a commitment to the program's goals. Honors Program participants have opportunities to attend special lectures, go on field trips, and work at their own pace in a setting that encourages goal-setting, perspective-taking, and independence. The MSU Honors Program is designed to help ensure a successful undergraduate experience, foster creativity and self-direction, and prepare students for future professional and post-graduate work.

A student invited to join the Honors Program typically has 1) graduated in the top 10 percent of his or her high school class, 2) attained a composite score of 25 or above on the ACT or its equivalent, or 3) attained a GPA of

3.3 in college-level course work. Transfer and international students are admitted on an individual basis after eligibility has been determined.

#### Required Courses (35 credits):

The Minnesota State University, Mankato, Honors Program offers participants an alternative to the University's general education requirements, which are waived for Honors students; instead, the Honors program requires 35 credits under the following four categories:

- I Honors Seminars (4-8 credits)
- II Honors Sections of General Education Courses (17-23 credits)
- III Honors Special Topics Courses (4-8 credits)
- IV Honors Senior Project (2-3 credits)

Cultural diversity requirements must be satisfied as required by the university.

Students pursuing a B.A. degree will also be required to complete at least one year of a foreign language; selected AP or CLEP credits may be used as a part of the student's general education program.

English and math competency must be satisfied by meeting the requirements of one's major field of study.

#### POLICIES/INFORMATION

**GPA Policy.** A student in the Honors Program is expected to maintain a 3.0 (cumulative GPA) during the first year, a 3.1 during the sophomore year, a 3.2 during the junior year, and a 3.3 during the senior year. An Honors Program student who has attained a 3.3 GPA upon graduation will be eligible for University Scholar designation. An undergraduate who does not fulfill Honors Program requirements must complete the standard general education requirements set by the university.

**P/N Grading Policy.** A student in the Honors Program may take a maximum of 6 credits as P/N.

## Humanities

*College of Arts & Humanities*

*Humanities Program*

230 Armstrong Hall • 507-389-2350 or 389-2117

Director: William Dyer

Interdisciplinary humanities explores human experience through examination of texts, performances, art symbols, cultural and historical systems, and other modes of human expression. The Humanities Program is concerned with connections between particular texts and their social and historical contexts, with relationships among the various arts—literary, performing and visual—and with links to other disciplines that explore the human condition.

The Humanities Program helps to prepare its students to use language effectively, to locate information from a variety of sources and examine it critically, to discover patterns of relationships within this wealth of in-

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## Humanities

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formation and sources, to view these patterns within cultural and historical perspectives, and to assess the beliefs, values, and ideologies that lie beneath or within these patterns and perspectives.

**Admission to Major** is granted by the department. Minimum university admission requirements are:  
- a minimum of 32 earned semester credit hours.  
- a minimum cumulative GPA of 2.00 (C).  
Contact the department for application procedures.

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### HUMANITIES BA

**Required for Major (Core, 27-28 credits):**

HUM 150\* The Western Humanities (4)  
HUM 155\* Global Humanities (4)  
HUM 450 Humanities Seminar (4)  
HUM 490 Senior Capstone Project (4)

Choose one course from the following:

HUM 250 Topic in Humanities (4)  
HUM 251^ Coming of Age: Gender and Culture (3)

Choose two courses from the following:

HUM 280 Humanities Traditions (4)  
HUM 281^ Human Diversity and Humanities Traditions (4)  
HUM 282\* Global Perspectives and Humanities Traditions (4)

250, 280, 281, 282 may be repeated when topic differs.

**Required for Major (8-9 credits):**

PHIL 460 Philosophy of the Arts (3)

Choose a minimum of 5-6 credits of courses in approved departments not in second major or minors. At least 4 credits of electives must be in 300 or 400 level classes, in addition to PHIL 460:

Elective xxx Elective xxx Elective xxx  
Elective xxx Elective xxx Elective xxx

**Required for Major: one additional Major or two Minors**

### HUMANITIES MINOR

**Required for Minor (15-16 credits):**

HUM 450\* Humanities Seminar (4)  
HUM 150 The Western Humanities (4)  
HUM 155 Global Humanities (4)

Choose one course from the following:

HUM 250\* Perspectives in Humanities (4)  
HUM 251\* Coming of Age: Gender and Culture (3)  
HUM 280\* Humanities Traditions (4)  
HUM 281\* Human Diversity and Humanities Traditions (4)  
HUM 282 Global Perspectives and Humanities Traditions (4)

**Required for Minor (Electives, 2-3 credits):**

Electives chosen in consultation with the director of humanities. Must be in 300 or 400-level classes.

Choose a minimum of 2-3 credits for an elective:

ELECTIVE xxx

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### POLICIES/INFORMATION

**GPA Policy.** Candidates for a major in Humanities must maintain a 2.5 grade-point average.

**P/N Grading Policy.** Humanities core courses taken for a major or minor in Humanities may not be taken on a P/N basis.

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### COURSE DESCRIPTIONS

**150 (4) The Western Humanities**

An introduction to the interdisciplinary study of the Western Humanities, from ancient times to the present. Artistic, philosophical and religious forms of cultural expression are considered within their social and historical contexts. F

**155 (4) Global Humanities**

An introduction to the interdisciplinary study of the humanities, as expressed through the cultures and traditions of Asia, Africa, and others. Artistic, philosophical and religious forms of cultural expression are considered within their social and historical contexts.

This is a Cultural Diversity Related course. S

**250 (4) Perspectives in Humanities**

Explores the critical analysis of written, visual and/or musical texts; considers these texts from a variety of cultural and historical contexts; and analyzes issues that engage basic questions of human existence, for individuals and societies. May be repeated when topic changes. V

**251 (3) Coming of Age: Gender and Culture**

This is a Learning Fund course. The content is the same as Women's Studies 251: Coming of Age: Gender and Culture.

This is a Cultural Diversity Related course. ALT-S

**280 (4) Humanities Traditions**

Historical or cultural periods, beliefs, or movements within the larger Western traditions of Europe and America and the expressions of these traditions through the visual, literary and performing arts and other forms. May be repeated when topic changes. V

**281 (4) Human Diversity and Humanities Traditions**

Cultural and artistic traditions of groups that have experienced discrimination or exclusion in U.S. society and how these groups express themselves through the visual, literary and performing arts and other forms. May be repeated when topic changes. V

**282 (4) Global Perspectives and Humanities Traditions**

Historical or cultural periods, beliefs, or movements of one of more groups outside Europe and America and the expressions of these traditions through the visual, literary and performing arts and other forms. May be repeated when topic changes. V

**350 (1-3) Reading for Honors**

Independent reading in the Humanities. Requires permission of faculty member.

**450 (4) Humanities Seminar**

Intensive study of a topic related to the Humanities. Topics have included the Baroque Era, Modernism and the Arts, and Culture and Critical Theory. ALT-Y

**490 (4) Senior Capstone Project**

An individual project by Humanities Majors that will

## Interior Design & Construction Management

demonstrate an ability to use interdisciplinary methods to draw together different areas of study in focusing on a specific topic, problem or concern. Requires approval of the Humanities Director or designated advisor.

Pre: Admission to college as Humanities Major

### 499 (1-4) Individual Study

Interdisciplinary study in an area for which the student has basic preparation.

Pre: Approval of faculty

## Interior Design & Construction Management

*College of Science, Engineering & Technology  
Department of Interior Design & Construction Management*

354 Wiecking • 507-389-6385

Web site: [www.mnsu.edu/dept/idcm/](http://www.mnsu.edu/dept/idcm/)

Chair: Carl M. Egan

Scott Fee, C. Michael Lindstrom, Chris Priest

The mission of the Department of Interior Design and Construction Management is to provide preparation for diverse employment opportunities following completion of the degree program. This program leads to a Bachelor of Science in Interior Design and Construction Management. It provides graduates with the essential tools and competency levels for design or managerial careers. Students may choose from among four options: Construction Management; Facilities Planning and Management; Historic Restoration and Preservation; or Interior Design. The options focus on culturally diverse issues and foster mutual respect, self-development, and fulfillment.

**Admission to Major** is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

### INTERIOR DESIGN AND CONSTRUCTION MANAGEMENT BS

#### Required for all Majors (Core, 18 credits):

IDCM 111 Introduction to Design & Construction Management (2)

IDCM 216 Construction Methods (3)

IDCM 248 Contract Documents (2)

IDCM 250 Mechanical and Electrical Systems (3)

IDCM 280 Fundamentals of Interior Design (4)

IDCM 281 Architectural Graphics (4)

#### Required for all Majors (Option):

Choose an option as outlined below:

#### CONSTRUCTION MANAGEMENT OPTION

The objective of the construction management option is the promotion and improvement of collegiate education for construction administration. It also seeks to

provide a background in general education so that students are better enabled to cope with the environment in which they must work and live.

#### Required General Education (4 credits):

MATH 112 College Algebra (4)

#### Recommended General Education (22 credits):

BIOL 201 Ecology and Human Society (3)

ENG 101 Composition (4)

GEOG 100 Elements of Geography (3)

PHIL 120 Introduction to Ethics (3)

SOC 101 Introduction to Sociology (3)

SPEE 100 Fundamentals of Speech Communication (3)

URBS 100 Introduction to the City (3)

#### Required Support Course (3 credits):

COMS 101 Introduction to Microcomputers (3) (or equivalent)

#### Required for Option (Construction Management, 27 credits):

IDCM 212 Surveying and Site Planning (2)

IDCM 215 Fundamentals of Estimating (3)

IDCM 311 Equipment Management (2)

IDCM 312 Foundations and Concrete Structures (3)

IDCM 413 Cost Estimating and Bidding (3)

IDCM 414 Computerized Estimating and Scheduling (3)

IDCM 445 Construction Systems Management (3)

BED 345 Business Communications (3)

BLAW 476 Construction and Design Law (3)

MET 424 Industrial and Construction Safety (2)

#### Required for Option (Business Related, 24 credits):

ACCT 200 Financial Accounting (3)

ACCT 210 Managerial Accounting (3)

BLAW 200 Legal, Political and Regulatory Environment of Business (3)

\*ECON 201 Principles of Macroeconomics (3)

\*ECON 202 Principles of Microeconomics (3)

MGMT 200 Introduction to MIS (3)

MGMT 330 Principles of Management (3)

Select one of the following:

FINA 362 Business Finance (3)

MGMT 440 Human Resource Management (3)

MGMT 482 Business, Society and Ethics (3)

\* Either course may be used to meet Category 5 of General Education requirements.

#### Required (External Studies, 9 credits):

IDCM 106 Construction Experience (1)

IDCM 497 Internship: Construction Management (8)

**Required Minor:** None.

#### FACILITIES PLANNING AND MANAGEMENT OPTION

The facilities planning and management option is designed to provide the students with an appropriate background in both interior design and construction management. This background will enable the graduate to successfully design, manage, and maintain both



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## Interior Design & Construction Management

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small and large scale commercial and institutional environments. Facilities management integrates principles of behavioral and engineering sciences, business administration, and construction management.

### Recommended General Education (26 credits):

BIOL	201	Ecology and Human Society (3)
ENG	101	Composition (4)
GEOG	100	Elements of Geography (3)
MATH	112	College Algebra (4)
PHIL	120	Introduction to Ethics (3)
SOC	101	Introduction to Sociology (3)
SPEE	100	Fundamentals of Speech Communication (3)
URBS	100	Introduction to the City (3)

### Required Support Courses (12-13 credits)

COMS	101	Introduction to Microcomputers (3) (or equivalent)
FINA	477	Real Estate (3)
MET	407	Facility Planning (2) <b>or</b>
RPLS	379	Facilities Planning and Management (3)
MET	423	Ergonomics (2)
MET	424	Industrial and Construction Safety (2)

### Required for Option (Facilities Planning and Management, 55 credits):

IDCM	212	Surveying and Site Planning (2)
IDCM	215	Fundamentals of Estimating (3)
IDCM	282	Interior Design Portraiture (4)
IDCM	283	Interior Design Lighting and Color (4)
IDCM	362	History of the Decorative Arts II (4)
IDCM	372	Interior Design Resources (4)
IDCM	413	Cost Estimating and Bidding (3)
IDCM	414	Computerized Estimating and Scheduling (3)
IDCM	445	Construction Systems Management (3)
IDCM	480	Topics: Interior Design Product Development (4)
IDCM	481	Interior Design Studio III (4)
IDCM	482	Interior Design Studio IV (4)
IDCM	483	Procedures and Practices in Interior Design (4)
ACCT	200	Financial Accounting (3)
ACCT	210	Managerial Accounting (3)
BLAW	476	Construction and Design Law (3)

### Required Internship (3 credits):

IDCM	497	Internship: Facilities Planning and Management (3)
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**Required Minor:** None.

### **HISTORIC RESTORATION AND PRESERVATION OPTION**

The historic restoration and preservation option is designed to provide students with appropriate backgrounds in architectural history, decorative arts history, urban development, restoration techniques, and preservation administration. The focus of this option is applied rather than theoretical. The successful graduate will be able to pursue careers in both small and large scale restoration projects primarily involving construction companies and interior design firms. A secondary theme is the adaptive reuse of existing historical buildings.

### Recommended General Education (30 credits):

BIOL	201	Ecology and Human Society (3)
ENG	101	Composition (4)
GEOG	100	Elements of Geography (3)
HIST	191	United States Since 1877 (4)
MATH	112	College Algebra (4)
PHIL	120	Introduction to Ethics (3)
SOC	101	Introduction to Sociology (3)
SPEE	100	Fundamentals of Speech Communication (3)
URBS	100	Introduction to the City (3)

### Required Support Courses (15-16 credits):

COMS	101	Introduction to Microcomputers (3) (or equivalent)
URBS	435	Downtown Revitalization (3)
URBS	437	Urban Heritage Preservation (3)
URBS	457	Economic Development (3)
Choose one of the following:		
HIST	190	United States to 1877 (4)
HIST	191	United States since 1877 (4)
HIST	450	Minnesota to 1880 (3)
HIST	451	Minnesota since 1880 (3)
HIST	470	American Frontier (4)
THEA	464	Costume History (3)

### Required for Option (Historic Restoration and Preservation, 50 credits):

IDCM	215	Fundamentals of Estimating (3)
IDCM	282	Interior Design Portraiture (4)
IDCM	283	Interior Design Lighting and Color (4)
IDCM	361	History of the Decorative Arts I (4)
IDCM	362	History of the Decorative Arts II (4)
IDCM	372	Interior Design Resources (4)
IDCM	381	Interior Design Studio I (4)
IDCM	413	Cost Estimating and Bidding (3)
IDCM	414	Computerized Estimating and Scheduling (3)
IDCM	445	Construction Systems Management (3)
IDCM	482	Interior Design Studio IV (4)
IDCM	483	Procedures and Practices in Interior Design (4)
IDCM	499	Individual Study (3)
BLAW	476	Construction and Design Law (3)

### Required (Internship, 2 credits)

IDCM	497	Internship: Historic Restoration and Preservation (2)
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**Required Minor:** None.

### **INTERIOR DESIGN OPTION**

The interior design option qualifies the graduate to enter a variety of fields in interior design, business, industry, and government. It provides a comprehensive background in residential and commercial design. It is based upon the principles of functional and aesthetic utilization of space and design.

### Recommended General Education (37 credits):

ANTH	101	Introduction to Anthropology (3)
BIOL	100	Our Natural World (4)
ENG	101	Composition (4)

## Interior Design & Construction Management

FREN	101	Elementary French I (5)
HIST	191	United States Since 1877 (4)
MUS	120	Introduction to Music (3)
MATH	112	College Algebra (4)
PSYC	101	Psychology (4)
SPEE	102	Public Speaking (3)
URBS	100	Introduction to the City (3)

### Required for Option (Interior Design, 44 credits):

IDCM	282	Interior Design Portraiture (4)
IDCM	283	Interior Design Lighting and Color (4)
IDCM	361	History of the Decorative Arts I (4)
IDCM	362	History of the Decorative Arts II (4)
IDCM	372	Interior Design Resources (4)
IDCM	381	Interior Design Studio I (4)
IDCM	382	Interior Design Studio II (4)
IDCM	480	Topics: Interior Design Product Development (4)
IDCM	481	Interior Design Studio III (4)
IDCM	482	Interior Design Studio IV (4)
IDCM	483	Procedures and Practices in Interior Design (4)

### Required External Studies (4 credits):

IDCM	492	Seminar: Interior Design Resource Seminar (1)
IDCM	498	Internship: Interior Design (3)

## POLICIES/INFORMATION

**GPA Policy.** A minimum grade of “C” is required in all courses.

**P/N Grading Policy.** All courses in the major must be taken for letter grade except where P/N is the only option.

For interior design students, the department reserves the right of acquisition and exhibition of work completed in the studios under the guidance of the interior design faculty.

## COURSE DESCRIPTIONS

### 106 (1) Construction Experience

Construction Experience consists of at least 15 weeks of work in the construction industry and must precede the internship program. This credit may be waived for experience acquired prior to enrolling at Minnesota State University, Mankato.

### 111 (2) Introduction to Design and Construction Management

Overview of academic preparation and career opportunities in the fields of: Construction Management; Facilities Planning and Management; Historic Restoration and Preservation; and Interior Design.

### 212 (2) Surveying and Site Planning

Basic surveying as related to the layout of construction work sites, focusing on measurement of distances, angles, and elevations, and making selected computations.

Pre: MATH 112

### 215 (3) Fundamentals of Estimating

Covers principles of quantity takeoff including identification of symbols and trigonometric computations of materials from construction blueprints. Includes commercial and residential types of construction plans.

Pre: MATH 112 (or concurrently), IDCM 111 and 281

### 216 (3) Construction Methods

Processes utilized in material handling and installation are examined for their effect on managing design and construction projects. Scheduling concepts are studied for patterns to yield higher productivity in the construction process.

Pre: IDCM 111

### 248 (2) Contract Documents

Basic understanding of the plans and specifications for construction projects. Emphasis on interpretation of bidding and contractual documents, conditions of the contract, technical specifications, quantity takeoffs, and the plans/working drawings.

Pre: IDCM 111 and 281

### 250 (3) Mechanical and Electrical Systems

Design concepts of heating, plumbing, electrical and control systems are analyzed for attributes that effect the design and construction processes and the performance of completed structures.

Pre: IDCM 111

### 280 (4) Fundamentals of Interior Design

Introduction to the elements and principles of design and their application within residential and commercial interior environments.

### 281 (4) Architectural Graphics

For contractors and designers working in a collaborative process. Emphasis on plan reading, introduction to architectural hand drafting, architectural symbols, vocabulary lettering and three-dimensional illustration techniques.

### 282 (4) Interior Design Portraiture

An introduction to the principles of interior portraiture including techniques for the creation of three-dimensional illustrations, color illustration techniques, and presentation formats.

Pre: IDCM 280 and 281

### 283 (4) Interior Design Lighting and Color

Study of lighting and color principles and theories as major tools in the design of human environments through research, study, and actual problem solving.

Pre: IDCM 280, 281, 282

### 291 (1) Lectures in Construction Management

Seminars will be conducted by leaders in industry, government and business to learn how they function in their role of management and their relationship to the construction industry.

### 311 (2) Equipment Management

Study of equipment used in the construction industry with emphasis on equipment selection and cost factors involved in owning and operating equipment.

Pre: IDCM 111 and 216

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## Interior Design & Construction Management

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### **312 (3) Foundations and Concrete Structures**

Soil identification and testing methods are examined to identify design concepts and construction circumstances that can effect projects. Concrete design and workmanship principles are then studied for their effect on quality and durability of construction. Foundation design principles are examined for their effect on scheduling, equipment selection and project success.

Pre: IDCM 216 (or concurrently)

### **361 (4) History of the Decorative Arts I**

A history of the Decorative Arts from Prehistoric human development to the European Periods, with appropriate historical architectural study.

### **362 (4) History of the Decorative Arts II**

A history of the Decorative Arts including American Primitive through Victorian and Mid-19th century through current contemporary developments, with appropriate historical architectural study.

### **372 (4) Interior Design Resources**

Methods and materials for interior environments. Investigation of residential and commercial materials and product lines.

### **381 (4) Interior Design Studio I**

Emphasis on large scale residential environments to include investigation of resources and specialty design projects. Portfolio review will follow.

Pre: IDCM 280, 281, 282, 283, 361, and 362

### **382 (4) Interior Design Studio II**

Design of commercial environments emphasizing restaurants, including specialized kitchen and barrier-free design. Scale-model presentation techniques will be explored.

Pre: IDCM 381

### **383 (4) Basic CAD for Interior Design**

Provides a basic foundation for computer-aided drafting using 200i AutoCAD from Autodesk, Inc. Course includes a hands-on lab designing floor plans, elevations, sections, details, specifications to furnishings, reflected ceiling plans, power plans and isometrics. The focus is on the construction and design professions.

### **413 (3) Cost Estimating and Bidding**

Advanced application of procedures and theory in formulating estimates on highway, grading and utility projects. Study includes job selection, estimating production, compilation of costs, the final preparation of bids, and ethics in estimating and bidding.

Pre: IDCM 215, 216, 248 and 311 (Pre 311 waived for FR & M and HR & P)

### **414 (3) Computerized Estimating and Scheduling**

The process of construction estimating is extended by the use of computers together with specialized construction software packages to increase job productivity. Software utilized includes commonly used packages in the construction industry on workstations.

Pre: IDCM 311 and 413 (or concurrently); COMS 101 or equivalent; ACCT 210 (Pre 311 waived for FP & M and HR & P)

### **445 (3) Construction Systems Management**

This course encompasses an overview of the operations

of a firm relevant to strategic management. Identified and analyzed are the positions and roles of construction management personnel and their interrelationship with key individuals external to the company. Global issues impacting management are discussed.

Pre: IDCM 413, ACCT 210

### **480 (4) Topics: Interior Design Product Development**

Exploration of selected topics in interior design and related industries emphasizing product design, research, and development.

Pre: IDCM 281, 282, 361, and 362

### **481 (4) Interior Design Studio III**

Emphasis on large scale commercial environments with an emphasis on systems planning and the investigation of contract resources. Projects require the schematic development of private and public space.

Pre: IDCM 381 and 382 (PRE waived for FP & M)

### **482 (4) Interior Design Studio IV**

Comprehensive Senior Design Thesis. Large scale environment to include all aspects of previous courses of study with a segment on Institutional Design.

Pre: IDCM 480 and 481 (PRE waived for HR & P)

### **483 (4) Procedures and Practices in Interior Design**

Business practices for the Interior Designer including design contracts, business forms, coordination of documents, and professional ethics. Professional portfolio development through analysis and objective critique. Senior standing.

Pre: IDCM 381 and 382

### **490 (1-4) Workshop: Interior Design and Construction Management**

Exploration of techniques, technology and theories relating to design and construction industries. Course may be repeated for credit as content changes.

### **491 (1-6) In-Service: Interior Design and Construction Management**

Advanced study into current developments in design and construction related industries, professional orientation, and affiliations. Course may be repeated for credit as topics change.

### **492-00 (1-4) Seminar: Interior Design and Construction Management**

Advanced study into current topics of interest in design and construction related industries. Course may be repeated for credit as topics change.

### **492-01 (1-4) Seminar: Interior Design Resource Seminar**

Examination of resources available within the design industry through tours of specific markets, i.e., Chicago, IL, or Highpoint, NC.

### **497-01 (1-5) Internship: Construction Management (P/N)**

One full academic term of industry employment as a construction management trainee to be taken during or at the end of the senior year.

### **497-02 (3) Internship: Construction Management (Grade)**

One full academic term of industry employment as a

## International Business

construction management trainee to be taken during or at the end of the senior year.

Pre: IDCM 497-01

### **497-03 (1-10) Internship: International Construction Management (P/N)**

One full academic term of international experience as a construction management trainee to be taken during or at the end of the senior year.

### **497-04 (1-5) Internship: Facilities Planning and Management**

A scheduled work assignment with supervision in private business, industry or government agency appropriate to Facilities Planning and Management.

### **497-05 (1-5) Internship: Historic Restoration and Preservation**

A scheduled work assignment with supervision in private business, industry or government agency appropriate to Historic Restoration and Preservation.

### **498 (1-6) Internship: Interior Design**

Supervised work experience in design or design related field within private business, industry or a government agency.

### **499 (1-4) Individual Study**

An in-depth study on a topic of particular interest to the student. Project must be approved by project supervisor and department chairperson.

## International Business

*College of Business*

*Department of Marketing & International Business*

150 Morris Hall • 507-389-2967

Chair: Kevin Elliott

Kenneth A. Anglin, Linda K. Anglin, H. Turgut Guvenli, Mark Hall, M. Anaam Hashmi, Basil Janavaras, Ann T. Kuzma, John R. Kuzma, Gerald W. Stiles, Li Zhang.

The international business program offers an integrated undergraduate degree. The objective of the program is to train and prepare students to compete and excel in today's increasingly interdependent global economy.

International Business minor is designed to complement the student's major field of study and enhance his/her career opportunities. It is strongly recommended to students in business administration, marketing, management, aviation management, finance, accounting, computer science, language, political science, history, geography, and other related areas.

**Admission to Major** typically occurs at the beginning of the student's junior year. A student must be admitted to the program for permission to register for 300-400 level courses.

1. GPA of 2.5 for unconditional admission.
2. Completion of 33 credits of general education requirements.
3. Demonstrated microcomputer competency by successfully completing COMS 101, Introduction to Microcomputers, or equivalent.

4. Completion of ACCT 200, 210; ECON 201, 202, 207; MGMT 200; MATH 112; BLAW 200; Second Year Experience 201.
5. Completion of 60 credits (or in progress).

### **INTERNATIONAL BUSINESS BS**

#### **Required General Education (7 credits):**

ECON 201	Principles of Macroeconomics (3)
MATH 112	College Algebra (4)

#### **Business Foundation Requirement (25 credits):**

##### **Lower Division**

ACCT 200	Financial Accounting (3)
ACCT 210	Managerial Accounting (3)
BED 345	Business Communications (3)
BLAW 200	Legal, Political & Regulatory Environment of Business (3)
COMS 101	Introduction to Microcomputers (3)
ECON 202	Principles of Microeconomics (3)
ECON 207	Business Statistics (4)
MGMT 200	Introduction to MIS (3)

##### **Upper Division (Core, 19 credits):**

MRKT 310	Principles of Marketing (3)
MGMT 330	Principles of Management (3)
FINA 362	Business Finance (3)
IBUS 380	Principles of International Business (3)
MGMT 346	Production and Operations Management (3)
MGMT 395	Personal Adjustment to Business (1)
MGMT 481	Business Policy and Strategy (3)

#### **Required for International Business Major (15 credits):**

IBUS 428	International Marketing (3)
IBUS 448	International Management (3)
IBUS 469	International Business Finance (3)
IBUS 485	Export Administration (3)
IBUS 490	International Business Policy (3)

#### **Required Elective (3 credits):**

Choose one of the following:

IBUS 419	International Business Seminar (3)
IBUS 486	Consulting for Export Business (3)
IBUS 499	Individual Study (3)
BLAW 453	International Legal Environment of Business (3)
ECON 420	International Economics (3)

#### **Required Electives (Business Function, 9 credits):**

Select three courses from one of the following business function areas:

##### **OPTION A: Marketing**

MRKT 316	Consumer Behavior (3)
MRKT 318	Promotional Strategy (3)
MRKT 324	Marketing Research and Analysis (3)
MRKT 339	Distribution Strategy (3)
MRKT 412	Professional Selling (3)

##### **OPTION B: Finance**

FINA 460	Investments (3)
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## International Business

FINA	462	Strategic Financial Management (3)
FINA	463	Security Analysis (3)
FINA	464	Financial Institutions and Markets (3)
ACCT	310	Management Accounting I (3)

### **OPTION C: Management**

MGMT	440	Human Resource Management (3)
MGMT	444	Organization Design (3)
MGMT	448	Operations, Planning and Control (3)
MGMT	452	Operations Strategy (3)
MGMT	459	Management Information Systems (3)
MGMT	480	Human Behavior in Organizations (3)
MGMT	485	Introduction to Management Science (3)

### **Related International Elective (3 credits):**

Choose one of the following:

GEOG	341	World Regional Geography (3)
POL	231	World Politics (3)
POL	433	International Organization (3)

### **Required Minor: None**

### **INTERNATIONAL BUSINESS MINOR**

#### **Required for Minor (18 credits):**

MRKT	310	Principles of Marketing (3)
IBUS	380	Principles of International Business (3)
Choose four courses from the following:		
IBUS	419	IBUS 428 IBUS 448
IBUS	469	IBUS 485 IBUS 490
BLAW	453	

### **POLICIES/INFORMATION**

Students have an advisor from their area of interest assigned to them. Questions and concerns pertaining to advising and the assignment of advisors can be answered student relations coordinator, 151 Morris Hall, telephone 507-389-2963.

College of Business students must complete a minimum of 64 credits outside the College of Business.

Students who are non-business majors, business minors, or those who are not seeking a four year degree may not complete more than 30 credits in the College of Business.

Students must be admitted to the College of Business to be granted a Bachelor of Science (B.S.) degree in International Business.

**Residency.** Transfer students must complete a minimum of 30 resident credits at the upper division (300-400) in the College of Business. Transfer students pursuing a major/minor in the College of Business must complete 50% (one-half) of their minor coursework through Minnesota State University, Mankato.

**Information Technology Initiative.** Students with an International Business major or minor are required to purchase a notebook computer with standard set of applications from Minnesota State University, Campus Computer Store. Students who are majoring in other colleges, but are required to take IBUS 380 will be able to enroll in a non-notebook class offered once per year

for non-majors/minors. For further information see the College of Business section at the front of this bulletin.

**GPA Policy.** Students must earn a minimum grade-point average of 2.0 (C) on all the courses taken to earn the minor.

**P/N Grading Policy.** No more than one-fourth of a student's major shall consist of P/N grades.

**Assessment Policy.** The College of Business believes that the assessment of its programs make a vital contribution to those programs and student learning. Student participation is an important and expected part of the assessment process.

**Student Organizations.** The International Business Organization operates on both a professional and personal level. IBO creates cultural awareness and provides interaction among students and international business professionals. IBO members participate in conferences, business tours, annual trips, meetings and social activities.

The Council of Student Business Organizations (COSBO) which is comprised of the presidents of the seven organizations and the college representative to the Student Senate, works directly with the Dean's office in the coordination of activities of the various organizations and sponsors activities of their own.

**Internships.** Students are encouraged to participate in business and industrial organizations through intern programs. Internships are available during the junior or senior years. Students interested in internships should interview early with the internship coordinator for enrollment in this program.

### **COURSE DESCRIPTIONS**

#### **380 (3) Principles of International Business**

International dimensions of business: global business environment (economic, cultural, legal, political) and international business functions (management, marketing, finance, exporting, importing).

Pre: Junior Standing F, S

#### **419 (3) International Business Seminar**

Topics on current developments in international business, technology, and legislation.

Pre: IBUS 380 F

#### **428 (3) International Marketing**

Managerial approach to marketing decision making in multicultural market situations.

Pre: MRKT 310, IBUS 380 F

#### **448 (3) International Management**

This course examines cross-cultural differences in business practices. Among the topics covered are the differences in management styles, multiculturalism, international negotiations, as well as international human resource issues, social responsibility and ethics in a global context, international labor relations, cultural synergy and multicultural teams.

Pre: IBUS 380 F



## International Relations

### 469 (3) International Business Finance

International finance functions in a corporation include currency issues, investment, financial markets interacting, raising debt and equity, and export financing.

Pre: IBUS 380 S

### 485 (3) Export Administration

Provides knowledge and documentary skills in managing and implementing the export operations of firms engaged in international trade.

Pre: IBUS 380 S

### 486 (3) Consulting for Export Business

Student teams under faculty supervision assist area firms interested in developing or expanding international business.

Pre: Senior Standing/consent V

### 490 (3) International Business Policy

A capstone course for students majoring in international business designed to analyze and integrate the various international business management decisions.

Pre: IBUS 428, 448, 469 S

### 491 (1-3) In-Service

Topics will vary across various hands-on practical experiences.

Pre: Consent V

### 497 (1-9) Internship

Supervised experience in business, industry, state or federal institutions. P/N only.

Pre: Consent F, S

### 498 (1-3) Internship

Supervised experience in business, industry, state or federal institutions. Taken for grade only.

Pre: Consent F, S

### 499 (1-4) Individual Study

Individual study of special topics.

Pre: Consent F, S

## International Relations

*College of Social & Behavioral Sciences*

*Department of Political Science*

109 Morris Hall • 507-389-2721

Advisors: Abdalla Battah, Tom Inglot, Jackie Viece

The degree is designed to prepare students for employment in international organizations, governmental and charitable agencies in the international arena, business and financial institutions with overseas interests, or to provide a broad liberal arts education.

**Admission to Major** is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours
- a minimum cumulative GPA of 2.00 (C).

To prepare a program of study suitable to the needs and interests of the individual student, the international relations major is required to consult with an advisor. The student's individualized program will be on file with the

Political Science Department and the awarding of a degree will depend upon fulfillment of the program.

### INTERNATIONAL RELATIONS BA

#### Required Credits for Major (42 credits)

#### Required for Major (Core, 15 credits):

ANTH	230	People: An Anthropological Perspective (3)
POL	231	World Politics (3)
POL	241	Introduction to Comparative Politics (3)
POL	431	International Relations (3)
POL	300-400	Any comparative politics course (3)

#### Required for Major (Option, 15 credits):

With the advice and consent of an International Relations advisor, each International Relations major will build an emphasis in one of the following areas from the approved course list. Please see an International Relations advisor for copies of the list of approved courses.

1. Global Policy Issues
2. International Norms and Behavior
3. International Political Economy
4. War, Peace and Conflict Resolution
5. A regional emphasis in one area of the following:
  - a. Africa
  - b. Asia
  - c. Latin America
  - d. Middle East
  - e. Russia and neighboring states
  - f. Europe
6. General Emphasis

#### Required for Major (Electives, 12 credits):

With the advice and consent of an International Relations advisor, each IR major will select the remainder of their credits from an approved list of IR program courses.

#### Required for Major (Foreign Language, 8 credits):

All students must take a year's sequence in a foreign language, unless waived as a result of examination or because the student has already learned English as a second language. These credits in a foreign language do not count as part of the international relations degree program course work.

#### Required Minor: Yes. Any.

### POLICIES/INFORMATION

**GPA Policy.** Students must earn a minimum grade-point average of 2.0 (C).

**P/N Grading Policy.** With the exception of internship credits, which must be taken on a P/N basis, no more than one-fourth of the credits in the major may be taken as P/N. Internship credits will not be counted as part of the one-fourth limitation, but will be subtracted from the total hours required for the major or minor prior to the computation of the one-fourth limitation.

With the consent of an International Relations advisor, the student may utilize credits in foreign language above

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## International Relations

and beyond the 100 level, provided the student is not majoring or minoring in that foreign language.

Employment opportunities with respect to this degree are highly dependent upon the area the student selects as a companion minor or second major. For possible second majors or minors and employment opportunities associated with each, the student is urged to consult with an advisor.

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## Latin American Studies

*College of Social & Behavioral Sciences*  
*Department of Anthropology*  
358 Trafton Science Center N • 507-389-6504

Director: Winifred Mitchell

Erwin Grieshaber, Karl Heise, Tomasz Ingot, Jose Lopez

This interdisciplinary minor enables students from a variety of majors to focus on Latin America. This training is useful in many careers including international business, international relations, Spanish and social studies teaching, and the disciplines of the departments which contribute to the minor. When filing for graduation, Latin American studies minors should enter the code LATA in the column where minors are listed.

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### LATIN AMERICAN STUDIES MINOR

#### Required for Minor (16 credits):

Choose 3-7 credits from the following:

SPAN	356	Latin American Civilization (1-4)
SPAN	403	Topics in Spanish American Literature (1-4)
SPAN	494	Supervised Study in Mexico: Themes in Spanish American Literature (1-6)
SPAN	496	Supervised Study: Themes in Hispanic Culture (1-6)

Choose 9-13 credits from at least three departments:

ANTH	412	Prehistory of Latin America (3)
ANTH	430	Ethnography of Latin America (3)
GEOG	445	Latin America (3)
HIST	442	History of Latin America (4)
POL	444	Latin America Politics (3)

Other offerings may be substituted with permission of the director. For course descriptions see the department listings.

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### POLICIES/INFORMATION

**GPA Policy.** Minors must have a minimum GPA of 2.0 (C).

**P/N Grading Policy.** No more than one fourth of credits in minor may be taken P/N.

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## Law Enforcement

*College of Social & Behavioral Sciences*  
*Department of Political Science/Law Enforcement*  
109 Morris Hall • 507-389-2721

Web site: [www.mnsu.edu/dept/psle/welcome.html](http://www.mnsu.edu/dept/psle/welcome.html)

Director: John H. Parham

Susan Burum, Doran Hunter, Dave Indrehus, William Lewinski, John Parham, Mark Robbins, Tamara Wilkins

The law enforcement program is designed for men and women seeking a professional career in criminal justice and law enforcement. It is open to in-service students who wish to improve their basic education, and to pre-service students who may be interested in pursuing a career in law enforcement.

In order to enter the police profession, applicants should be aware that height, visual and other physical and mental standards are set by law enforcement agencies. Students should be aware that some criminal convictions prevent licensure as a peace officer. Law enforcement students should consider these standards.

**Admission to Major: Option I** is granted by the department. Admission to Option I requires satisfaction of departmental GPA and course prerequisites as well as POST Board documentation. Since these requirements are subject to change, students should contact the Political Science/Law Enforcement Department Office for current admission requirements.

**Admission to Major: Option II** is granted by the department. Contact the department for application procedures.

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### LAW ENFORCEMENT BA, BS

#### Required General Education (7 credits):

ENG	101	Composition (4)
POL	111	US Government (3)

#### Required Support Courses (7 credits):

SPEE	100	Fundamentals of Speech Communication (3) <b>or</b>
SPEE	101	Interpersonal Communication (3)
ENG	113	Intro. Prose Literature (4) <b>or</b>
ENG	211	Perspectives: Human Diversity and Literature/Film (4) <b>or</b>
ENG	212	Perspectives: World Literature/Film (4) <b>or</b>
ENG	270	Advanced Composition (4) <b>or</b>
ENG	271	Tech Communication (4)

#### Required for Major (Option I or Option II):

There are two different options for the law enforcement degree. The Option I program is certified as meeting the academic learning objectives of the Minnesota Peace Officer Standards and Training (P.O.S.T.) Board. Option II is designed for students who do not wish to take the P.O.S.T. Board Certification Test in Minnesota.

#### **OPTION I (PRE-PROFESSIONAL)**

Leads to Minnesota Licensure when combined with Skills Component.

#### Required for Option I (Core, 44 credits):

LAWE	131	Introduction to Law Enforcement (3)
LAWE	231	Criminal Law and Procedures (3)
LAWE	232	Victims, Survivors: Police Response (3)
LAWE	233	Criminal Investigation (3)

## Law Enforcement

LAWE 234 Policing in a Diverse Society (3)  
**Successfully** apply for admission to Option I program before taking 300-400 level classes. See Law Enforcement Office for details.

LAWE 331 Police Stress (3)  
 LAW 332 Police Juvenile Justice Procedure (3)  
 LAW 335 Police and the Community (3)  
 LAW 343 Police Emergency Response Procedures (4)  
 LAW 344 Tactical Communications (4) (Pre: LAW 343 or instructors permission)  
 LAW 431 Police Patrol: Theory, Practice (3)  
 LAW 432 Minnesota Criminal Code (3)  
 LAW 433 Senior Seminar (3)  
 Choose one of the following:  
 POL 221 Introduction to Political Analysis (3)  
 POL 260 Introduction to Public Administration (3)  
 POL 371 State and Local Government (3)

### Required for Option I (Electives, 12 credits):

6 credits of LAW 300 level; 3 at the 300/400 level; 6 credits of electives from the following departments:

CHEM 131	CHEM 134	COMS xxx
CORR xxx	ETHN xxx	HLTH 210
POL xxx	PSYC xxx	RPLS xxx
SOC xxx	SOWK xxx	SPAN xxx
SPEE xxx	WOST xxx	

**Required for Bachelor of Arts (BA) degree ONLY:**  
 Language (8)

**Total Credits Required for Major (56 credits)**

**Required Minor: None**

### OPTION II (GENERALIST)

#### Required for Option II (Core, 27 credits):

LAW 131 Introduction to Law Enforcement (3)  
 LAW 231 Criminal Law and Procedures (3)  
 LAW 232 Victims, Survivors: Police Response (3)  
 LAW 233 Criminal Investigation (3)  
 LAW 234 Policing in a Diverse Society (3) **or**  
 ETHN 100 American Racial Minorities (3)  
 LAW 331 Police Stress (3)  
 LAW 335 Police and The Community (3)  
 POL 221 Introduction to Political Analysis (3)

Choose one of the following:

POL 371 State and Local Government (3)  
 POL 451 Administrative Law (3)  
 POL 452 Jurisprudence (3)  
 POL 454 Civil Liberties (3)  
 POL 475 Judicial Process (3)

#### Required for Option II (Electives, 9 credits):

3 credits of LAW 300 level; 6 credits from the following departments:

CHEM 131	CHEM 134	COMS xxx
CORR xxx	ETHN xxx	HLTH 210
POL xxx	PSYC xxx	RPLS xxx
SOC xxx	SOWK xxx	SPAN xxx
SPEE xxx	WOST xxx	

**Required for Bachelor of Arts (BA) degree ONLY:**  
 Language (8)

**Total Credits Required for Major (36 credits)**

**Required Minor: Option II. Yes. Any.**

### LAW ENFORCEMENT MINOR (21 total credits)

#### Required for Minor (Core, 9 credits):

LAW 131 Introduction to Law Enforcement (3)  
 LAW 231 Criminal Law and Procedures (3)  
 POL 111 United States Government (3)

#### Required for Minor (12 credits):

Choose 12 credits from the following:

LAW 233	LAW 234	LAW 235
LAW 332	LAW 335	LAW 393
LAW 434	LAW 435	LAW 436
LAW 437	LAW 438	LAW 491
LAW 493		

All required classes in the minor must be taken for a grade.

### POLICIES/INFORMATION

**GPA Policy.** Students seeking to graduate with a bachelor's degree in law enforcement (either option) must have accrued a 2.5 grade-point average in their major.

**P/N Grading Policy.** All law enforcement classes (both options and minor) except LAW 492 must be taken for a grade.

**Minnesota Licensure.** The student must successfully complete the Option I program and an integrated "skills" program and meet other P.O.S.T. Board and Minnesota State University requirements before being approved to take the P.O.S.T. Board licensure examination. This includes being certified in first aid and CPR (Red Cross Emergency Response, First Responder or EMT currently qualify). Only graduates of certified two and four year academic programs that also meet the requirements of the "skills" program providers may enter an integrated skills program. The licensure examination is administered by P.O.S.T. and covers those items included in the P.O.S.T. Board academic and skills learning objectives. Note: Since P.O.S.T. Board rules change from year to year we advise students to contact the program director for current rules regarding licensure.

### COURSE DESCRIPTIONS

#### 131 (3) Introduction to Law Enforcement

The course provides a survey of the institutions and processes of the criminal justice system with and emphasis and the role of law enforcement agencies in a free society. Political theories of justice are explored with theories of crime causation. F, S

#### 132 (3) Crime and Punishment

An overview of conflicting theories in criminal justice and the tools to critically evaluate the theories and present the strengths and weaknesses of each in written, oral or other forms. V

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## Law Enforcement

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### **231 (3) Criminal Law and Procedures**

The history and development of criminal law procedures and their application by law enforcement.

Pre: LAWE 131 F, S

### **232 (3) Victims/Survivors: Police Response**

The purpose of this course is to develop in the student an insight into the dynamics of interpersonal violence, particularly sexual violence. The focus will be on developing effective law enforcement responses to the victims/survivors and the perpetrators. F, S

### **233 (3) Criminal Investigation**

Procedures of crime investigations, procurement and preservation of evidence, interrogation and courtroom testimony. F, S

### **234 (3) Policing In a Diverse Society**

Historically, minority members have often faced disparate treatment in the criminal justice system. Because of physical, cultural and economic distinctions, this course is designed to provide students of law enforcement with the basic tools and skills needed to improve interpersonal communications with citizens, victims, suspects, and co-workers.

### **235 (3) Women In Law Enforcement**

This course utilizes a broad multi-disciplinary approach in examining the forces, theories, and popular beliefs that influenced the restriction and eventual acceptance of women in the policing profession. Included in this course are perspectives from the social, historical, biological, political, and social-psychological sciences.

### **331 (3) Police Stress**

This course will cover the sources of interpersonal and interpersonal stress in the law enforcement profession. Students will be required to assess their vulnerability to these stressors and develop their own strategies and tactics for coping. F, S

### **332 (3) Police, Juvenile Justice Procedure**

This course focuses on the law enforcement approach to the juvenile justice system and how it has evolved in the United States. Theories of delinquency are reviewed. Minnesota Juvenile Code in emphasized. V

### **335 (3) Police and The Community**

This course explores the theories of community policing, what community policing is and is not, and what recent research reveals regarding police in the community. The student will be introduced to positive principles of interaction between the police officer and the citizens of the community in which the officer serves. F, S

### **336 (3) Advanced Criminal Investigation**

A survey of methods and techniques for the investigation of major crimes.

Pre: LAWE 233 or instructor's permission V

### **343 (4) Police Emergency Response Procedure**

This course will cover the crisis intervention aspects of law enforcement from the perspectives of officer safety, communications, persuasion, problem solving and interpersonal

relations. It will start with the fundamentals and build skills in the areas of working with emotionally distraught individuals, death notifications, suicide, dispute intervention, and interpersonal problem solving. F, S

### **344 (4) Tactical Communication**

This course integrates officer safety and procedures with the role of street communications. The class starts with the basic elements of fitness, the dynamics and legalities of force, and the theory and fundamentals of structured communication. These themes and skills are then integrated into routine law enforcement scenarios.

Pre: LAWE 343, admission to Option I or consent of instructor F, S

### **393 (1-4) Issues in Law Enforcement**

An examination of issues facing law enforcement today in constantly changing legal, social and cultural environments. Topics will vary and may be repeated for credit.

Pre: LAWE 131 V

### **431 (3) Police Patrol: Theory/Practice**

Provides students with specific procedures for handling various types of routine calls and situations and provides a base for handling those incidents which are not routine. Emphasizes critical thinking skills through discussion, assignments and evaluations.

Pre: Junior or senior standing F, S

### **432 (3) Minnesota Criminal Code (criminal code and traffic law)**

An extensive study of Chapter 609, Minnesota Criminal Code, and traffic law.

Pre: LAWE 231, admission to Option I or consent F, S

### **433 (3) Senior Seminar**

This is the capstone course for LAWE Option 1 and will include such topics as P.O.S.T. License review, ethics and interviewing skills. F, S

### **434 (3) Comparative Criminal Justice Systems**

A comparison of criminal justice philosophies, structures, and procedures found in various countries around the world. Same as POL 449. V

### **435 (3) Jurisprudence**

Philosophy and sources of law. Schools of legal philosophy and types of legal thinking. Emphasis is placed on Classical Natural Law, Analytical Legal Positivism, Legal Realism and Critical Legal Studies. Same as POL 452. F

### **436 (3) Civil Liberties**

Review of selected United States Supreme Court decisions interpreting important freedoms contained in the Bill of Rights and the 14th Amendment. Focus is on the rationale which underlies decisions and their impact on American political social processes. Provides an opportunity to exercise and develop individual analytical abilities through analysis of Court's reasoning. Same as POL 454. V

### **437 (3) Judicial Process**

An examination of the structure, jurisdiction and processes of federal and state courts. Emphasis is placed on selec-

## Management

tion of judges and justices and on the dynamics of judicial decision-making. Same as POL 475. V

### 438 (3) Terrorism and Political Violence

History, philosophy, techniques and countermeasures to terroristic and law intensity threats to public order. Both domestic and international terror. The blurring of the lines between low intensity conflict/terrorism and multinational high intensity crime. Same as POL 485. V

### 439 (3) Police Administration and Planning

An examination of emerging administrative and management concepts and the processes related to their implementation. V

### 491 (1-5) Topics in Law Enforcement

This course explores topics in law enforcement beyond what is covered in the existing curriculum. Students study specialized topics of current importance in the field. Specific topics will change depending on the term and instructor. May be retaken with a change of topic. V

### 492 (1-8) Internship

Field placement with a law enforcement agency or related organization. Provides a learning experience in which the student can integrate and apply knowledge and theory derived from curriculum. P/N only. V

### 493 (1-3) Individual Study

Advanced study and research on topics not currently available in existing courses. May be repeated with a change of topic. Requires advisor and instructor approval of topic. V

## Liberal Studies

*College of Arts & Humanities*

*Liberal Studies Program*

226 Armstrong Hall • 507-389-1712

Coordinator: Carrie Williams • 507-389-1770

This Associate of Arts (A.A.) degree is intended for those students who wish to pursue a two-year balanced program of liberal education.

Students should complete the general education requirements for the B.S. degree, plus 20 credits of lower division electives for a total of 64 semester credits.

### POLICIES/INFORMATION

**GPA Policy.** A minimum GPA of 2.0 is required.

**P/N Grading Policy.** All coursework must be taken for letter grade.

## Management

*College of Business*

*Department of Management*

150 Morris Hall • 507-389-2966

Web site: [www.mgmt.mnsu.edu](http://www.mgmt.mnsu.edu)

Chair: Miles Smayling

William Brown, Yong Suk Choi, Brenda Flannery, Marilyn Fox, Jon Kalinowski, Rakesh Kawatra, Sung Kim, Howard Miller, Claudia Pragman, Buddhadev Roychoudhury, Paul Schumann, Timothy Scott, Dooyoung Shin

The primary objective of the Department of Management is to offer a program of study with the aim of developing the technical, analytical and conceptual skills for the future leaders of the private and public sectors. Study provides the student with fundamental principles and practices of effective management. Emphasis is placed on organizational functioning within changing socio-cultural, economic, legal and political environments. Students may select and complete one or more of the following areas: general management, human resource management, and management information systems.

**Admission to Major** typically occurs at the beginning of the student's junior year. A student must be admitted to a College in the University for permission to register for 300-400 level courses. A student can only expect one temporary admission to the College of Business before permanent admission.

1. GPA of 2.5 for admission.
2. Completion of 33 credits of general education requirements. Consult bulletin for cultural diversity requirements.
3. Demonstrated microcomputer competency by successfully completing COMS 101, Introduction to Microcomputers (MIS majors should take COMS 111), or equivalent.
4. Completion of ACCT 200, 210; ECON 201, 202, 207; MGMT 200; BLAW 200; MATH 112; Second Year Experience 201.
5. Completion or in progress of 60 semester credits.

### MANAGEMENT BS

#### Required General Education (7 credits):

ECON 201 Principles of Macroeconomics (3)  
MATH 112 College Algebra (4)

#### Required Support Courses (10-11 credits):

ECON 202 Principles of Microeconomics (3)  
ECON 207 Business Statistics (4)  
COMS 101 Introduction to Microcomputers (3)\*  
\* MIS majors choose COMS 111 (4)

#### Required for Major (Core, 34 credits):

ACCT 200 Financial Accounting (3)  
ACCT 210 Managerial Accounting (3)  
BED 345 Business Communications (3)  
BLAW 200 Legal, Political and Regulatory Environment of Business (3)  
MGMT 200 Introduction to MIS (3)  
MRKT 310 Principles of Marketing (3)  
MGMT 330 Principles of Management (3)  
MGMT 346 Production and Operations Management (3)



## Management

FINA	395	Personal Adjustment to Business (1)
MGMT	481	Business Policy and Strategy (3)
FINA	362	Business Finance (3)
IBUS	380	Principles of International Business (3)

### Required for Major (Options, 21-38 credits):

Select at least one of the following options:

#### GENERAL MANAGEMENT OPTION

MGMT	440	Human Resource Management (3)
MGMT	444	Organization Design (3)
MGMT	459	Management Information Systems (3)
MGMT	480	Human Behavior in Organizations (3)

Pick any three of the following:

MGMT	443	Entrepreneurship (3)
MGMT	447	Management: Special Topics (3)
MGMT	455	Dynamics of Negotiations (3)
MGMT	482	Business, Society and Ethics (3)
MGMT	385	Introduction to Management Science (3)
MGMT	497	Internship (3)
ACCT	310	Management Accounting I (3)
MRKT	441	Consulting for Small Business (3)
MGMT	449	Quality Management (3)

#### HUMAN RESOURCE MANAGEMENT OPTION

MGMT	440	Human Resource Management (3)
MGMT	441	Staffing (3)
MGMT	442	Compensation Management (3)
MGMT	445	Training and Development (3)
MGMT	480	Human Behavior in Organizations (3)

Choose at least six credits of the following:

MGMT	455	Dynamics of Negotiations (3)
ECON	403	Labor Problems (3)
FINA	466	Employee Benefits Planning (3)
ACCT	310	Management Accounting I (3)
HLTH	488	Worksite Health Promotion (3)
MET	423	Ergonomics (2)
BLAW	452	Employment and Labor Law (3)

Required Minor: None.

#### MANAGEMENT INFORMATION SYSTEMS OPTION

### Required (Core, 18 credits):

MGMT	440	Human Resource Management (3) <b>or</b>
MGMT	444	Organization Design (3)
MGMT	458	Corporate Information Systems (3)
MGMT	476	Decision Support Systems (3)
MGMT	477	Computer Performance Modeling (3) <b>or</b>
MGMT	385	Introduction to Management Science (3)
MGMT	473	Introduction to E-Commerce (3)
MGMT	471	Wireless Networks (3) <b>or</b>
MGMT	472	Information Technology Project Management (3)

### Required (Computer Information Science, 20 credits):

COMS	112	Fundamentals of Computer Science II (4)
COMS	280	Systems Analysis and Design (4)
COMS	340	Database Management Systems I (4)

Choose one of the following tracks:

Track 1:

COMS	462	Data Communications and Networks I (4)
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COMS	463	Data Communications and Networks II (4)
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Track 2:

COMS	371	Applications Programming (4)
COMS	481	Rapid Application Development (4)

Track 3:

COMS	260	Assembly Language Programming (4)
COMS	320	Computer Organization I (4)

Track 4:

COMS	350	Operations Research I (4)
COMS	450	Operations Research II (4)

Required Minor: None.

### Recommended: Internship

An internship can be a valuable addition to your educational experience. Please see your advisor or the Management Internship Coordinator for internship opportunities for advanced professional growth.

## HUMAN RESOURCE MANAGEMENT MINOR

### Required for Minor (18 credits):

MGMT	330	Principles of Management (3)
MGMT	440	Human Resource Management (3)
MGMT	441	Staffing (3)
MGMT	442	Compensation Management (3)
MGMT	445	Training and Development (3)
MGMT	480	Human Behavior in Organizations (3)

## MANAGEMENT MINOR

### Required for Minor (21 credits):

COMS	101	Introduction to Microcomputers (or equivalent) (3)
MGMT	200	Introduction to MIS (3)
MGMT	330	Principles of Management (3)
MGMT	440	Human Resource Management (3)
MGMT	444	Organization Design (3)
MGMT	480	Human Behavior in Organizations (3)

Choose one of the following:

MGMT	346	Production and Operations Management (3)
MGMT	441	Staffing (3)
MGMT	442	Compensation Management (3)
MGMT	443	Entrepreneurship (3)
MGMT	447	Management: Special Topics (3)
MGMT	449	Quality Management (3)
MGMT	455	Dynamics of Negotiations (3)
MGMT	459	Management Information Systems (3)
MGMT	482	Business, Society and Ethics (3)

## POLICIES/INFORMATION

Management Information Systems (MIS) is a cross disciplinary field of study which combines the technical aspects from computer science with the resource management techniques from business. To reflect this cross disciplinary nature of the field, there are two MIS programs at MSU: one is offered in the Department of Computer and Information Sciences; the other is offered in the Department of Management. Students who have an interest and an aptitude for the technical aspects of MIS should consider the Management Information Sys-

tems major in the Department of Computer and Information Sciences; students who have an interest and an aptitude for the resource management component of MIS should consider the Management major, MIS option in the Department of Management. Students pursuing either MIS program will be required to thoroughly study both the technical and non-technical aspects of MIS.

Students have an advisor from their area of interest assigned to them. Questions and concerns pertaining to advising and the assignment of advisors can be answered by Larry Herke, student relations coordinator, 151 Morris Hall, telephone 507-389-2963.

Students must be admitted to the College of Business and the program to be granted Bachelor of Science Degree, Major in Management.

College of Business students must complete a minimum of 64 credits outside the College of Business. ECON 201, 202, and 207 are counted as credits outside the College of Business.

Students who are non-business majors, business minors, or those who are not seeking a four year degree may not complete more than 30 credits in the College of Business.

**Residency.** Transfer students must complete a minimum of 30 resident credits at the upper division (300-400) in the College of Business. Transfer students pursuing a minor in the College of Business must complete 50% (one-half) of their minor coursework through Minnesota State University, Mankato.

**Information Technology Initiative.** Students with a Management major or minor are required to acquire a notebook computer with a standard set of applications from the Campus Computer Store at Minnesota State University. Students who are majoring in other colleges but are required to take MGMT 200, 330, 346, and 458 will be able to enroll in non-notebook classes offered once per year. For further information see the College of Business section at the front of this bulletin.

**GPA Policy.** Students must earn a minimum grade-point average of 2.0 (C) on the total courses taken in the College of Business to meet graduation requirements.

**P/N Grading Policy.** No more than one-fourth of a student's major shall consist of P/N grades.

**Assessment Policy.** The College of Business believes that the ongoing assessment of its program makes a vital contribution to those programs and student learning. Student participation is an important and expected part of the assessment process.

**Student Organizations** Delta Sigma Pi is a coeducational business fraternity organized to further the camaraderie of business students and professionals. Delta Sigma Pi provides members the opportunity to network with current business students and alumni throughout the United States.

The Human Resource Management Club is an accredited member of the Society for Human Resource Management. HRMC is in direct contact with human

resource executives through conferences, meetings and social events. All majors are welcome.

The Management Information Systems Club brings together students with common interests in the application of information systems to management problems. All students are welcome.

The Council of Student Business Organizations (COSBO) which is comprised of the presidents of the seven organizations and the college representative to the Student Senate, works directly with the Dean's office in the coordination of activities of the various organizations and sponsors activities of their own.

**Internships** Students are encouraged to participate in business and industrial organizations through intern programs. Internships are available during the junior or senior years. Students interested in internships should interview early with the internship coordinator for enrollment in this program.

## COURSE DESCRIPTIONS

### 200 (3) Introduction to MIS

This course explores information systems which assist management in planning, directing and controlling the activities of an organization. Primary emphasis is placed on analysis, design and implementation of systems which generate information for managerial purposes. This course includes the application of database management and spreadsheet processing systems.

Pre: COMS 101 or equivalent or COMS 111 and COMS 112 F, S

### 330 (3) Principles of Management

This course examines basic management concepts and principles, their historical development, and their application to modern organizations. Topics covered include planning, organizing, decision making, leadership, control, and organizational change. In addition, the course includes an introduction to business ethics and social responsibility, human resource management, organizational design and organizational behavior.

Pre: COB Junior Standing F, S

### 346 (3) Production and Operations Management

This course engages students in the study of the operations management function in manufacturing and service organizations. Students learn how to apply the basic analytical models to operation decisions involving topics such as scheduling, production technology, inventory management, quality assurance, just-in-time production, and others.

Pre: ECON 207 F, S

### 385 (3) Introduction to Management Science

This course introduces a scientific approach to modeling and solving managerial decision problems. It includes such topics as linear and integer programming, network models, waiting-line models, simulation analysis, and decision theory.

F, S

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## Management

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### **440 (3) Human Resource Management**

This course examines the effective management of the human resources of organizations. Topics include analyzing jobs and writing job descriptions; recruiting and hiring of applicants; complying with employment law; managing promotions, quits, and layoffs; employee training and development; evaluating job performance; determining compensation; and managing human resources in a unionized environment. F, S

### **441 (3) Staffing**

Students learn how to hire the best talent available using sound professional methods. Students design and present legally defensible recruiting and screening techniques for jobs they have analyzed.

Pre: MGMT 440 F, S

### **442 (3) Compensation Management**

The focus of this course is operating an effective, efficient, legal and responsible system for compensating one's employees. Includes the workings of labor markets, analyzing jobs, finding the market value for jobs, designing a pay structure, appraising performance, setting individual pay, determining benefits, occupations requiring special pay programs.

Pre: MGMT 440 F, S

### **443 (3) Entrepreneurship**

The course is an active learning course where students are immersed in the process of starting a new enterprise. In managing their entrepreneurial projects, students conceptualize and develop business plans that includes self assessment, industry and market analyses, a marketing plan, human resource management, and financial analyses and projections. Students have contact with other business professionals and entrepreneurs via field trips, guest speakers, and the end-of-term entrepreneurial fair held on campus. F

### **444 (3) Organization Design**

This course provides an understanding of the processes that cause organizations to be structured in various forms. The impact on size, technology, strategy, culture, and environmental conditions on structure are examined. The internal processes of power, conflict, culture, and organizational transformation are also emphasized.

Pre: MGMT 330 F, S

### **445 (3) Training and Development**

Students design and deliver training by assessing client needs, defining learning outcomes, choosing effective methods, training, and evaluating results.

Pre: MGMT 440 F, S

### **447 (3) Management: Special Topics**

Special topics as requested by students.

Pre: MGMT 330 V

### **448 (3) Operations Planning and Control**

This course covers the needs of managers in profit or non-profit organizations who are engaged in planning and control functions. The course also focuses on the use and application of emerging technologies in a global, competitive environment.

Pre: MGMT 346 V

### **449 (3) Quality Management**

This course covers essential topics in modern quality management within manufacturing and service organizations from a managerial perspective, including quality planning, culture, customer focus, leadership, vendor relations, the use of statistical quality control tools and software as well as behavioral issues in the improvement of process and product/service quality. F

### **451 (3) Advanced Topics in POM**

This course covers recent developments and trends in operations management. The emphasis is on such issues as JIT, GT, FMS, CIM, Concurrent Engineering, DFM, and Optimized Technology. Case studies and industrial projects will be used to illustrate the implementation aspects of the subjects covered. POM software applications are also emphasized.

Pre: MGMT 346, MGMT 485 V

### **452 (3) Operations Strategy**

Capstone course covering strategic issues in Operations Management, and their practical consequences for policy making. The emphasis is on (a) understanding how manufacturing interacts with other business functions, e.g. marketing, accounting, and finance, and (b) determining how the manufacturing function can contribute to the success of the firm.

Pre: MGMT 346 V

### **455 (3) Dynamics of Negotiations**

This course has three major objectives. Firstly, it introduces students to the analytical concepts necessary for effective business negotiations. Secondly, it provides a variety of applications that illustrate the importance of negotiations to management. Finally, the course provides students with the opportunity to practice business negotiation skills through a variety of experiential exercises. V

### **458 (3) Corporate Information Systems**

This course will provide conceptual frameworks and a practical guideline for understanding how information technologies can provide a competitive advantage, how to identify strategic information systems (SIS) opportunities and risks, how to manage organizational strategic information systems applications, and how to sustain such a competitive advantage in a global market. S

### **459 (3) Management Information Systems**

This course is designed to prepare students to design and develop personal computer based information systems for management control and decision making using end-user software including spreadsheets and data base management systems. Students will design and develop several information systems as group projects.

Pre: MGMT 200, MGMT 330 F, S

### **471 (3) Wireless Networks**

This course will cover topics such as: cellular systems, personal communication services, wireless LANs, SMR (specialized mobile radio), infrared and microwave-base communication services including geostationary satellites, LEOS, MEOS and specialized satellite services, VSAT systems, direct broadcasting, meteor burst communication systems, mobile (sea and land) based networks. Issues

such as transmission methodologies (FDMA, TDMA, CDMA), routing LMDS, channel allocation, addressing and naming, locating mobile users, user authentication, privacy, security, bandwidth auctioning methods, and system expansion and transition over time.

Pre: Senior in MIS V

**472 (3) Information Technology Project Management**

Software project management encompasses the knowledge, techniques, and tools necessary to manage the development of software products. This curriculum module discusses material that managers need to create a plan for software development, using effective estimation of size and effort, and to execute that plan with attention to productivity and quality. Within this concept topics such as risk management, alternative life-cycle models, development team organization, and management of technical people will also be discussed.

Pre: Senior in MIS V

**473 (3) Intro to E-Commerce**

This course evaluates several critical facets of e-commerce including business models, developing a competitive advantage, rapid deployment and change management, evaluation of system architecture, security including firewall technology, role of channel partners, and existing and emerging internet technologies. A project is included with the course, which includes the development of Internet accessible database using Access 2000 and FrontPage 2000 with shopping cart software to enable secure payment capabilities and a product offering with interactive shopping capabilities.

Pre: MGMT 200 V

**476 (3) Decision Support Systems**

In the course of their decision activities, managers work with many pieces of knowledge and have to make informed decisions based on this knowledge. This course is designed to introduce students to the various decision making techniques and explore the techniques required for automating such activities among knowledge workers in an organization.

Pre: MGMT 485 F

**477 (3) Computer Performance Modeling**

An important function performed by IS professionals is the characterization and estimation of a computing system's performance and capacity for a known benchmark. This course provides an overview of primary modeling techniques to estimate server utilizations, system throughputs, and system response times. Students will develop a series of analytic and simulation based models.

Pre: MGMT 485 S

**480 (3) Human Behavior in Organizations**

Concepts, theories, and empirical research on organizational behavior are studied. Models and tools for diagnosing situations, individual behavior, group behavior, intergroup conflicts, supervisory problems and organizational change are analyzed.

Pre: MGMT 330 F, S

**481 (3) Business Policy and Strategy**

This course examines policy problems of profit and not-for-profit organizations, including top management prob-

lem solving and decision making; planning; appraising the business environment; evaluating financial, human and physical resources; forecasting; developing and implementing objectives and strategies; evaluating alternatives; and monitoring results and social responsibility through case analysis and or management simulation.

Pre: MGMT 330, FINA 362 and MRKT 310 F, S

**482 (3) Business, Society, and Ethics**

Students learn how to apply moral principles to analyze ethical dilemmas in business. Students also learn how to argue for or against government regulation of business. Topics covered include bribery, anti-competitive business practices, pollution, product safety, marketing ethics, employee rights, sexual harassment, discrimination and affirmative action, conflicts of interest, and insider trading.

F, S

**483 (3) Ethics in Business**

This course examines the meaning and relevance of business ethics to organizations in a diverse and globally competitive marketplace. It covers ethical theory, corporate social responsibility, ethical sales tactics, honesty in advertising, ethical duties to consumers, moral rights of employees, and business and professional codes of ethics.

V

**491 (1-3) In-Service**

V

**497 (1-9) Internship**

Supervised experience in business, industry, state or federal institutions. P/N only.

F, S

**498 (1-3) Internship**

Supervised experience in business, industry, state or federal institutions. Grade only.

F, S

**499 (1-4) Individual Study**

F, S

**MSU's Nursing Home Administration Track for Licensure in the State of Minnesota:**

A license is required to administer a nursing home in each of the 50 state.

In order to complete all academic course work for licensure, students must complete one class from each subpart (of which there are eight) and a practicum. Program consists of 24-25 credits.

- Subpart 1 - Organizational Management: **HLTH 659, Health Care Administration** or **MGMT 330, Principles of Management**
- Subpart 2 - Managerial Accounting: **ACCT 210, Management Accounting**
- Subpart 3 - Gerontology: **GERO 200, Interdisciplinary Perspectives** or **SOC 4/504, Sociology of Aging**
- Subpart 4 - Health Care and Medical Needs: **HLTH 4/555, Health and Aging** or **NURS 340, Gerontological Nursing**
- Subpart 5 - Nursing Facility Services, Programs and Issues, Subpart 7 - Regulatory Management: **GERO 4/580, Nursing Administration**
- Subpart 6 - Human Resources: **POLS 4/563, Public Personnel Administration** or **MGMT 4/540, Human Resource Management** or **POLS 662, Seminar: Human Resource Management**

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## Management

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- Subpart 8 - Information Uses: **MGMT 200, Introduction to MIS**
- Practicum: **GERO 4/698, Practicum in Nursing Home Administration**

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## Manufacturing Engineering Technology

*College of Science, Engineering & Technology*

*Department of Automotive & Manufacturing*

*Engineering Technology*

205 Trafton Science Center E

Phone: 507-389-6383

Fax: 507-389-5002

Web site: [www.amet.mnsu.edu](http://www.amet.mnsu.edu)

Chair: Kirk Ready

Lee Anderson, Ann Goebel, Andrzej Markowski, Bruce Jones, Harry Petersen, Paul Sullivan

The Bachelor of Science degree in Manufacturing Engineering Technology prepares the student for a career in manufacturing. Students study the design, development, analysis, planning, materials, supervision, and fabrication of industrial and consumer goods. Graduates obtain positions in manufacturing industries where they organize workers, materials and machines so a reliable product can be produced efficiently.

**Accreditation.** The program is accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, Telephone: 410-347-7700.

**Admission to Major** is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.
  - a minimum cumulative GPA of 2.00 (C).
- Contact the department for application procedures.

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### MANUFACTURING ENGINEERING TECHNOLOGY BS

#### **Required General Education (22 credits):**

ENG	101	Composition (4)
SPEE	100	Fund. of Speech Comm. (3) <b>or</b>
SPEE	102	Public Speaking (3)
MATH	115	Precalculus Mathematics (4)
MATH	121	Calculus I (4)
PHYS	211	Principles of Physics I (4)
CHEM	105	Introduction to Chemistry (3)

#### **Required Support Courses (15 credits):**

ENG	271	Technical Communication (4)
MATH	127	Calculus II for Engineering Technology: Integration (2)
STAT	154	Elementary Statistics (3)
PHYS	212	Principles of Physics II (4)
COMS	171	Introduction to C++ Programming (2)

#### **Required for Major (Core, 57 credits):**

MET	104	Introduction to Manufacturing Engineering Technology (1)
EET	113	DC Circuits (3)
MET	141	Computer Aided Drafting (4)
MET	144	Industrial Design (2)
MET	177	Materials Processing I and Metallurgy (4)
MET	245	Computer Aided Design (3)
MET	277	Materials Processing II (4)
MET	322	Statics, Dynamics, and Mechanics of Materials (5)
AET	334	Fluid Power (3)
MET	347	Manufacturing Automation (5)
AET	378	Composite Materials (3)
MET	407	Facility Planning (2)
MET	423	Ergonomics (2)
MET	424	Industrial Safety (2)
MET	425	Manufacturing Value Analysis (2)
MET	427	Quality Assurance (2)
MET	428	Work Measurement (2)
MET	429	Production and Inventory Control (2)
MET	432	Project Management (3)
MET	488	Senior Design Project I (1)
MET	489	Senior Design Project II (2)

**Minor Required: None.**

### MANUFACTURING ENGINEERING TECHNOLOGY MINOR

**Total Credits (16 credits)**

#### **Required for Minor (9 credits):**

MET	104	Introduction to Manufacturing Engineering Technology (1)
MET	141	Computer Aided Drafting (4)
MET	177	Material Processing I and Metallurgy (4)

#### **Required for Minor (Electives, 7 credits):**

Choose 7 credits of MET/AET courses:

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### POLICIES/INFORMATION

**GPA Policy.** A minimum GPA of 2.0 is required.

Refer to the College regarding required advising for students on academic probation.

**P/N Grading Policy.** No more than 1/4 of all undergraduate credits may be P/NC, except those courses offered P/NC only.

**Residency.** A minimum of 50 percent of the credits for a major or minor in Manufacturing Engineering Technology must be taken at Minnesota State University, Mankato.

Prerequisites and co-requisites must be observed. A flow chart of prerequisites is available in the Department Office.

The scheduling of all department courses is done yearly, based on enrollment and staffing. To obtain a current yearly class schedule, contact the Department.

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### COURSE DESCRIPTIONS

#### **104 (1) Introduction to Manufacturing Engineering Technology**

An overview of careers, technology and requirements for individuals interested in Manufacturing Engineer-



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## Manufacturing Engineering Technology

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ing Technology. Hands-on experience is gained in a variety of new technologies. Careers in engineering and technology are examined along with professional organizations and ethics. The course is intended as a first step toward a career in manufacturing.

### **141 (4) Computer Aided Drafting**

Fundamentals of technical drawings and use of AutoCAD as a drawing instrument. Conventions, standards and practices for 2D and 3D technical drawings. Lab projects cover introduction to AutoCAD, basic construction, geometric and editing techniques, orthographic and auxiliary drawings, dimensioning, and surface modeling.

### **144 (2) Industrial Design**

Fundamental concepts in product design through reports and projects. Course includes systematic approaches to key design phases, identification of design and process problems, the relationship of design to marketing and manufacturing activities, prototype testing, and cost implications.

Coreq: MET 141

### **145 (2) Computer Graphics**

A course intended for civil engineering students. Principles of AutoCAD along with civil engineering applications are covered.

### **177 (4) Material Processing I and Metallurgy**

Fundamentals of machine technology and metallurgy. Theory and step-by-step procedures are used to provide instruction on how to turn materials into products. Students learn to perform machining on a lathe, mill, and drill press, and also inspect the products. Basics of metal processing, plastic molding, and other processes are discussed.

Coreq: MET 141

### **245 (3) Computer Aided Design**

Computer Aided Designing covers a process of developing and analyzing solid parametric models for mechanical applications. Course includes solving technical designing problems based on real-world applications as well as creation of technical documentation: working and assembly drawings. Introduction to the Finite Element Analysis is included in the course. Currently used CAD systems are Mechanical Desktop from Autodesk Inc. and Pro-Engineer from PTC, Inc.

Pre: MET 141

### **277 (4) Materials Processing II**

A study of the principles of manufacturing technologies, measurements and equipment used in processing of an end product. Advanced manufacturing processes including casting, forging, sheet metal forming, material removal, joining, and powder metals are discussed. Topics also include materials treatment, preparation, and design for manufacture.

Pre: MET 177, Coreq: MET 245

### **322 (5) Statics, Dynamics, and Mechanics of Materials**

Course covers principles of force equilibrium, stress and strain, shear and torsion, bending moments, force diagrams,

deformations of beams, stress/strain analysis, kinematics and kinetics of rigid bodies, work, energy, and power.

Pre: PHYS 211 and MATH 121

### **345 (1-2) CAD Projects**

Advanced applications of computer aided design. Solid and parametric systems.

Pre: MET 245

### **347 (5) Manufacturing Automation**

Essentials of CNC technology, control hardware and software. Planning for NC operations, tooling and workholding for NC, manual and CAD/CAM programming. Milling and turning programming fundamentals, robotics, programmable logic controllers, flexible manufacturing systems.

Pre: MET 277, EET 113, COMS 171

### **407 (2) Facility Planning**

A study of industrial plant layout for maximum facility utilization. Topics include: factory layout, materials storage and handling, industrial equipment selection and mechanization.

Pre: MET 245 and 277

### **423 (2) Ergonomics**

Investigation of work place design and environmental stress from heat, noise, vibration, repetitive motion and illumination in worker-machine systems.

Pre: STAT 154

### **424 (2) Industrial Safety**

Techniques of developing safety practices in an industrial environment. Topics include OSHA, current legislation, cost analysis, personal protection, employee selection, psychological aspects, product safety, hazard materials and catastrophe control.

### **425 (2) Manufacturing Value Analysis**

A study of the optimal relationship between the value and function of products, the cost and availability of resources. Topics include the principles of engineering economy, costing systems, capital budgeting, breakeven analysis, the time value of money, comparison of alternatives, capital justification development, taxes and depreciation. Topics are enhanced through spreadsheet modeling for industry applications.

Coreq: MET 407

### **427 (2) Quality Assurance**

This course is focused on quality assurance systems, management philosophies, methodology, function, and impact of quality systems in manufacturing applications. Development and application of statistical process control tools are also addressed.

Pre: MATH 121, STAT 154

### **428 (2) Work Measurement**

Principles and practical applications of time and motion studies in manual and automated industrial settings. Considering the impact on quality, optimization of throughput, safety, ergonomics, and scheduling.

Pre: MATH 121, STAT 154

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## Manufacturing Engineering Technology

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### 429 (2) Production and Inventory Control

A study and application of the techniques and problems involved in maintaining competitive product production strategies, such as, material and enterprise resource planning, forecasting methods, supply chain management, process design and process simulation.

Coreq: MET 428

### 432 (3) Project Management

Development, implementation, and management for effective manufacturing project methodology throughout the entire product life cycle. Principles and case study applications include factors such as organizational structure, strategic planning, cost, time, and quality constraints, scheduling, resource allocation, conflict resolution, skills requirements, elements for project success, estimating, and trade-off analysis.

### 488 (1) Senior Design Project I

An examination of manufacturing design and research along with topics such as ethics, professionalism, measurement, statistics, and career development/ placement. This course also prepares the student for MET 489, Senior Design Project II, where the design proposal, design project, and final report are completed. This course must be taken in the spring semester of the junior year.

Coreq: STAT 154

### 489 (2) Senior Design Project II

A continuation of MET 488.

Pre: MET 488, ENG 271

### 492 (1-4) Manufacturing Seminar

Selected manufacturing topics.

### 497 (1-10) Internship: Manufacturing

Manufacturing work experience in an area pertinent to the student's objective. Consent of internship coordinator required prior to the beginning of employment and registration. Typically done between the junior and senior year.

Pre: 50% of major

### 499 (1-4) Individual Study

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## Marketing

*College of Business*

*Department of Marketing and International Business*  
150 Morris Hall • 507-389-2967

Chair: Kevin Elliott

Kenneth A. Anglin, Linda K. Anglin, H. Turgut Guvenli, Mark Hall, M. Anaam Hashmi, Basil Janavaras, Ann T. Kuzma, John R. Kuzma, Gerald W. Stiles, Li Zhang.

It is the objective of the department to advance the understanding and practice of marketing and international business.

Faculty advance the discipline of marketing through research, writing, and involvement in professional associations. They improve the practice of marketing with a progressive curriculum for full- and part-time students.

The region's business community and public institutions also are directly served with student and faculty consulting and research projects.

The marketing major prepares students for marketing positions in retail management, industrial sales, promotion, marketing research, or marketing management, and equips them with the comprehensive knowledge necessary to assume upper management positions in the marketing function.

**Admission to Major** typically occurs at the beginning of the student's junior year. A student must be admitted to the program for permission to register for 300-400 level courses.

1. GPA of 2.5 for unconditional admission.
2. Completion of 33 credits of general education requirements.
3. Demonstrated microcomputer competency by successfully completing COMS 101, Introduction to Microcomputers, or equivalent.
4. Completion of ACCT 200, 210; ECON 201, 202, 207; MGMT 200; MATH 112; BLAW 200; Second Year Experience 201.
5. Completion of 60 semester credits (or in progress).

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### MARKETING BS

#### **Required General Education (7 credits):**

ECON 201 Principles of Macroeconomics (3)  
MATH 112 College Algebra (4)

#### **Recommended General Education (3 credits):**

SPEE 102 Public Speaking (3)

#### **Business Foundation Requirements (25 credits):**

ACCT 200 Financial Accounting (3)  
ACCT 210 Managerial Accounting (3)  
BED 345 Business Communications (3)  
BLAW 200 Legal, Political and Regulatory Environment of Business (3)  
COMS 101 Introduction to Microcomputers (3)  
ECON 202 Principles of Microeconomics (3)  
ECON 207 Business Statistics (4)  
MGMT 200 Introduction to MIS (3)

#### **Upper Division (19 credits):**

MRKT 310 Principles of Marketing (3)  
MGMT 330 Principles of Management (3)  
FINA 362 Business Finance (3)  
IBUS 380 Principles of International Business (3)  
MGMT 346 Production and Operations Management (3)  
MGMT 395 Personal Adjustment to Business (1)  
MGMT 481 Business Policy and Strategy (3)

#### **Required for Marketing Major (18 credits):**

MRKT 316 Consumer Behavior (3)  
MRKT 317 Product and Pricing Strategy (3)  
MRKT 318 Promotional Strategy (3)  
MRKT 324 Marketing Research and Analysis (3)  
MRKT 339 Distribution Strategy (3)  
MRKT 490 Marketing Management (3)

**Required Electives (9 credits):**

Choose a minimum of three courses from the following:

MRKT	412	Professional Selling (3)
MRKT	413	Industrial Marketing (3)
MRKT	415	Retailing Management (3)
MRKT	420	Sales Management (3)
MRKT	428	International Marketing (3)
MRKT	441	Consulting for Small Business (3)
MRKT	480	Seminar (3)
MRKT	498	Internship (3)

**Required Minor: None.**

**MARKETING MINOR****Required for Minor (18 credits):**

MRKT	100	Global Business Concepts (3) or admission to the College of Business
MRKT	310	Principles of Marketing (3)
MRKT	316	Consumer Behavior (3)

Choose a minimum of three courses from the following:

MRKT	317	MRKT	318	MRKT	324
MRKT	339	MRKT	412	MRKT	413
MRKT	415	MRKT	420	MRKT	428

**POLICIES/INFORMATION**

Students have an advisor from their area of interest assigned to them. Questions and concerns pertaining to advising and the assignment of advisors can be answered by student relations coordinator, 151 Morris Hall, telephone 507-389-2963.

College of Business students must complete a minimum of 64 credits outside the College of Business.

Students who are non-business majors, business minors, or those who are not seeking a four year degree may not complete more than 30 credits in the College of Business.

Students must be admitted to the College of Business to be granted a Bachelor of Science (B.S.) degree in Marketing.

**Residency.** Transfer students must complete a minimum of 30 resident credits at the upper division (300-400) in the College of Business. Transfer students pursuing a minor in the College of Business must complete 50% (one-half) of their minor coursework through Minnesota State University, Mankato.

**Information Technology Initiative.** Students with a Marketing major or minor are required to purchase a notebook computer with standard set of applications from Minnesota State University Campus Computer store. Students who are majoring in other colleges but are required to take MKT 310 will be able to enroll in a non-notebook class offered once per year for non-majors/minors. For further information see the College of Business section at the front of this bulletin.

**GPA Policy.** Students must earn a minimum grade-point average of 2.0 (C) on the total courses taken in the College of Business to meet graduation requirements.

**P/N Grading Policy.** No more than one-fourth of a student's major shall consist of P/N grades.

**Assessment Policy.** The College of Business believes that the assessment of its programs makes a vital contribution to those programs and student learning. Student participation is an important and expected part of the assessment process.

**Student Organizations.** The American Marketing Association is a nationally affiliated marketing organization. AMA offers students opportunities to network with professionals in marketing-related fields, contribute to the community through service projects and meet other students. All majors are welcome.

Delta Sigma Pi is a coeducational business fraternity organized to further the camaraderie of business students and professionals. Delta Sigma Pi provides members the opportunity to network with current business students and alumni throughout the United States.

The International Business Organization operates on both a professional and personal level. IBO creates cultural awareness and provides interaction among students and international business professionals. IBO members participate in conferences, business tours, annual trips, meetings and social activities.

The Council of Student Business Organizations (COSBO) which is comprised of the presidents of the seven organizations and the college representative to the Student Senate, works directly with the Dean's office in the coordination of activities of the various organizations and sponsors activities of their own.

**Internships** Students are encouraged to participate in business and industrial organizations through intern programs. Internships are available during the junior or senior years. Students interested in internships should interview early with the internship coordinator for enrollment in this program.

**COURSE DESCRIPTIONS****100 (3) Global Business Concepts**

Focuses on the basic business functions of Accounting, Finance, Management, and Marketing in global context. F, S

**310 (3) Principles of Marketing**

This course provides a basic understanding of marketing concepts with emphasis on the pricing, promotion, and distribution of need satisfying products and services in domestic and international markets. The format of the course consists of lectures, case discussions, application exercises, projects, exams, and in-class group assignments. F, S

**316 (3) Consumer Behavior**

Students will learn about consumer decision styles, perceptions, group influences, family decision-making, lifestyles, shopping behaviors and domestic and international trends related to marketing strategies. The framework consists of individual or group projects, usually requiring some personal interviewing, exams, and reports. Pre: MRKT 310 F, S

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## Marketing

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### 317 (3) Product and Pricing Strategy

The intention of the course is to explore in depth the concepts involved in new product development, the management of products through the product life cycle, and the development of pricing policies and strategies. The course involves a lecture/discussion format with occasional group activities, projects and exams.

Pre: MRKT 310 F, S

### 318 (3) Promotional Strategy

Promotional strategy focuses on the utilization of all the elements of the promotion mix-advertising, personal selling, publicity, sales promotion, and corporate sponsorship-in the development of an effective promotion plan.

Pre: MRKT 310, 316 F, S

### 324 (3) Marketing Research and Analysis

In this course, students will examine the role of research in decision making and the basics of scientific research, including the preparation of research proposals, design of data collection instruments, data analysis, interpretation, and reporting.

Pre: MRKT 310, ECON 207 F, S

### 339 (3) Distribution Strategy

Defines the role of marketing channels within the marketing system. Topics in this course examine important issues in marketing distribution systems.

Pre: MRKT 310 F, S

### 412 (3) Professional Selling

The course is designed to provide basic human motivation theories, and develop persuasive communications strategies and applications necessary in the field of professional selling. The course takes a hands-on approach to professional selling techniques with the use of sales presentations, sales manuals, and exams.

Pre: MRKT 310 F, S

### 413 (3) Industrial Marketing

A broad examination of the techniques employed in business-to-business marketing. Topics include organizational buying, buyer-seller relationships and industrial marketing mix development.

Pre: MRKT 310 V

### 415 (3) Retailing Management

The study of marketing at the retail level, including the organization, operations, methods, policies, and problems of retail establishments in satisfying consumers.

Pre: MRKT 310, 316 V

### 420 (3) Sales Management

This course involves studying the role of the general sales manager, the functions of sales management within overall marketing strategy, and the development of analytical decision skills necessary to plan, manage, and control the sales force.

Pre: MRKT 310 V

### 428 (3) International Marketing

This course takes a managerial approach to analyzing marketing decision making in multinational market situations.

Pre: MRKT 310 and IBUS 380 F

### 441 (3) Consulting for Small Business

Student teams assist businesses with problems by conferring with clients, conducting analyses and recommending solutions. Problems may encompass accounting, finance, personnel procedures, production or marketing.

Pre: Consent ALT

### 480 (3) Seminar

Topics covered are specialized topics not covered in other courses and will be announced.

Pre: Consent V

### 490 (3) Marketing Management

This course should be the last marketing class taken, since it involves comprehensive marketing strategy development, integrating all dimensions of the marketing offering, and utilizing marketing information systems for top-level control and decision making. Students will complete a formal marketing plan, case analyses, and examinations.

Pre: MRKT 310, 316, 317, 318, 324, and 339 F, S

### 491 (1-3) In-Service

Topics will vary across various hands-on practical experience.

Pre: Consent V

### 497 (1-9) Internship

Individual, supervised experience in a business firm or government agency. Taken for P/N only.

Pre: Consent F, S

### 498 (1-3) Internship

Individual, supervised experience in a business firm or government agency. Taken for grade only.

Pre: Consent F, S

### 499 (1-4) Individual Study

Individual study of special topics.

Pre: Consent F, S

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## Mass Communications

*College of Arts & Humanities*

*Department of Mass Communications*

136 Nelson Hall • 507-389-6417

Web site: [www.mnsu.edu/dept/masscom/](http://www.mnsu.edu/dept/masscom/)

Chair: Chuck Lewis

John Gaterud, Jane S. McConnell, Ellen M. Mrja, Marshel D. Rossow

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The goal of the Department of Mass Communications is to prepare people for professional practice in mass communication. To this end, the department has the following objectives:

1. To train students in journalistic skills and competencies of a high professional standard requisite for their performing as reporters, writers, editors and photographers in print media; and as public relations specialists.
2. To enable students to intelligently assess mass media and to understand the power and weak-

## Mass Communications

nesses of their various components.

- To aid the professional who is seeking additional skills and information.

**Admission to Major** is granted by the department.

Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

Proficiency in English grammar, spelling, composition, and keyboarding is essential for admission to the major. A diagnostic test in English usage is required to determine such proficiency. The department requires that students complete with a cumulative GPA of 3.0 or better these courses (or their equivalents): ENG 101, Composition and MASS 110, Introduction to Mass Communications; and that students pass LME 101, Library Orientation. Overall GPA will also be considered in determining admission status. Students not meeting minimum requirements may petition the faculty in writing to seek admission.

No student entering the mass communications program as a major or minor may take courses beyond MASS 110, Introduction to Mass Communications, unless he/she has met the stated requirements. Students seeking entry into the department's major or minor program must present evidence of their satisfactory fulfillment of these requirements.

In preparation for undertaking a major or minor program in mass communications, students should consider taking these courses (or their equivalents): ECON 100, An Introduction to U.S. Economy; GEOG 103, Introductory Cultural Geography; ETHN 100, American Racial Minorities; POL 371, State and Local Government; PSYC 101, Psychology; SOC 100, Social Problems; SOC 101, Introduction to Sociology; WOST 110, Intro to Women's Studies.

### MASS COMMUNICATIONS BA, BS

#### Required General Education (19 credits):

ENG	101	Composition (4)
HIST	190	United States to 1877 (4)
HIST	191	United States Since 1877 (4)
MASS	110	Intro to Mass Communications (3)
POL	111	United States Government (3)
LME	101	Library Orientation (1)

#### Required for Major (Core, 28 credits):

MASS	221	Media Writing I (4)
MASS	312	Mass Communication Law (4)
MASS	322	Media Writing II (4)
MASS	341	The Editorial Process (4)
MASS	351	Photojournalism (3)
MASS	411	Ethics and Press Criticism (4)
MASS	412	History of Mass Communications (3)
MASS	498	Internship (1-6)

#### Required for Major (Options, 9 credits):

Select an option from the following:

#### GENERAL

Choose at least 9 credits from the following courses:

MASS	242	MASS	290	MASS	334
MASS	353	MASS	360	MASS	381
MASS	425	MASS	431	MASS	433
MASS	434	MASS	436	MASS	480
MASS	490	MASS	499	ART	200
ART	203	ART	204	ART	301
ART	302	ART	401	ART	402
ENG	270	ENG	271	ENG	342
ENG	475	POL	473	MRKT	310
BED	345	RPLS	377	MRKT	318

#### NEWS-EDITORIAL

Choose at least 9 credits from the following courses:

MASS	242	MASS	290	MASS	334
MASS	353	MASS	360	MASS	381
MASS	425	MASS	431	MASS	433
MASS	436	MASS	480	MASS	490
MASS	499	ART	200	ART	203
ART	204	ART	301	ART	302
ART	401	ART	402	ENG	270
ENG	271	ENG	342	ENG	475
POL	473				

#### PUBLIC RELATIONS

MASS 433 Public Relations Principles (4)  
MASS 434 Advanced Public Relations (3)  
Choose at least 2 credits from the following courses:

MASS	290	MASS	334	MASS	353
MASS	360	MASS	381	MASS	431
MASS	436	MASS	480	MASS	490
MASS	499	ART	200	ART	203
ART	204	ART	301	ART	302
ART	401	ART	402	BED	345
ENG	270	ENG	271	ENG	475
MRKT	310	MRKT	318	RPLS	377

**Required for Bachelor of Arts (BA) degree ONLY:**  
Language (8)

**Required Minor: Yes. Any.**

### MASS COMMUNICATIONS MINOR

#### Required General Education for Minor (19 credits):

ENG	101	Composition (4)
HIST	190	United States to 1877 (4)
HIST	191	United States since 1877 (4)
MASS	110	Introduction to Mass Communications (3)
POL	111	United States Government (3)
LME	101	Library Orientation (1)

#### Required for Minor (Core, 23 credits):

MASS	221	Media Writing I (4)
MASS	312	Mass Communications Law (4)
MASS	322	Media Writing II (4)
MASS	341	The Editorial Process (4)
MASS	411	Ethics and Press Criticism (4)
MASS	412	History of Mass Communications (3)

### POLICIES/INFORMATION

**GPA Policy.** Majors and minors must earn a cumulative GPA of 2.5 or better in all mass communications coursework, in addition to the 2.0 overall GPA required by the university for graduation.



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## Mass Communications

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Refer to the College regarding required advising for students on academic probation.

**P/N Grading Policy.** Mass communications majors and minors are required to take department courses for a letter grade, except for MASS 498, which must be taken P/N.

**Transfer Credit.** The department accepts no more than 13 credits from other colleges and universities as transfer credits to be applied toward the major or minor. They must be taken in courses that match or are the equivalent of courses that are either offered by the department or allowed by it for elective credit as shown in the areas of concentration.

**Internships.** Opportunities for mass communications internships exist on and off campus for junior and senior majors who want to work in professional settings. The internship must be done under professional supervision and is taken only after the student has (1) completed 19 credits in the core curriculum (MASS 411, Ethics and Press Criticism, and MASS 412, History of Mass Communications, are not included); (2) submitted a department internship contract signed by the student, the student's internship supervisor, and the department chair.

**Filing a Program.** By the end of the sophomore year the student, through individual consultation with a department advisor, should complete and file with the department a proposed program.

The department recommends that students develop a program of study that is complementary to their major in mass communications. Students concentrating in the news-editorial concentration are encouraged to elect courses in liberal arts, such as art, English, literature, modern language, history, humanities, philosophy and political science. Students concentrating in public relations are encouraged to elect courses in business administration, Marketing, English, psychology, sociology and speech.

**Communication Facilities.** In addition to a fully equipped modern computerized classroom, the Department of Mass Communications has access to a broad range of on-campus facilities that provide students practical experience. Students majoring in mass communications and in other fields contribute to publishing a student-oriented campus newspaper, *The Reporter*, and a campus literary magazine, and to producing programming for KMSU-FM radio.

**Counseling and Guidance.** The key to the department's selective approach to mass communications education is its counseling and guidance program. Students are encouraged to choose a department advisor. Working closely with this faculty person, students develop academic programs that relate to their needs, interests and career aspirations.

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### COURSE DESCRIPTIONS

#### **110 (3) Introduction to Mass Communications**

Nature, functions and responsibilities of the media in contemporary society. F, S

#### **221 (4) Media Writing I**

Basic techniques of gathering information and writing readable and accurate media stories.

Pre: ENG 101, MASS 110, LME 101 F, S

#### **242 (2) Radio Station Operation**

Principles of radio station operation, radio production techniques and study of FCC requirements.

Pre: MASS 221 V

#### **290 (1-3) Selected Topics in Mass Communications**

Selected topics in mass communications.

Pre: MASS 221 or consent V

#### **312 (4) Mass Communications Law**

Principles of the First Amendment, libel, fair trial, privacy, access to news, pornography and regulation of radio and television.

Pre: MASS 221, POL 111 F, S

#### **322 (4) Media Writing II**

Problems and techniques in reporting about public affairs and social issues.

Pre: MASS 221 F, S

#### **334 (3) Writing and Speaking for Broadcast**

Planning, writing and delivering of broadcast news.

Pre: MASS 221 V

#### **341 (4) The Editorial Process**

Instruction and practicum in editorial production: design and layout, editing, headlining, computerized typesetting.

Pre: MASS 221 F, S

#### **351 (3) Photojournalism**

Instruction and practicum in the operation of the still camera, development and reproduction of black and white photographs, and principles of photography as related to the journalistic process. Student must provide own 35mm camera.

Pre: MASS 221 F, S

#### **353 (2) Advanced Photojournalism**

Guided experiences in techniques and practicum of journalistic photography.

Pre: MASS 221 and MASS 351 V

#### **360 (3) Publications Layout**

Practicum in typography, design and layout for newspapers, magazines, newsletters, brochures and posters. Computer use in layout and design is stressed.

Pre: MASS 221 and MASS 341 V

#### **381 (1) Reading for Honors**

Directed reading program in literature of mass communications. For mass communications students who maintain 3.0 GPA or better.

Pre: MASS 221 and 3.0 GPA F, S

#### **411 (4) Ethics and Press Criticism**

Study, analysis and criticism of the mass media, their ethics and performance.

Pre: MASS 221 and MASS 312 F, S

#### **412 (3) History of Mass Communications**

Study of people and events that have shaped the Ameri-

can press.

Pre: MASS 221, HIST 190, HIST 191 F, S

#### 425 (3) Advanced Reporting

Advanced news reporting in depth; investigative and research techniques; background and feature series.

Pre: MASS 221 and MASS 322 V

#### 431 (3) Magazine Article Writing

Marketing and writing of magazine articles.

Pre: MASS 221 V

#### 433 (4) Public Relations Principles

Survey of current practices and problems in the field of public relations. Emphasizes successful case histories and planning techniques.

Pre: MASS 221 F, S

#### 434 (3) Advanced Public Relations

Guided experience in planning public relations programs and campaigns.

Pre: MASS 433 F, S

#### 436 (3) Specialized Writing

Techniques and practicum in writing of features, reviews, editorials, opinion columns and other specialized fields.

Pre: MASS 221 and MASS 322 V

#### 480 (1-3) Mass Media Seminar

Advanced studies in reading, writing and discussion on the practice, issues and literature of journalism.

Pre: MASS 221 V

#### 490 (1-3) Mass Communications Workshop

Discussion and hands-on experience involving mass media activities. Topic varies.

Pre: MASS 221 V

#### 498 (1-6) Internship

Practical mass media experience in a professional setting.

Pre: MASS 221, 312, 322, 341, 351 F, S

#### 499 (1-2) Individual Study

Directed research on a mass media topic chosen by the student.

Pre: MASS 221 F, S

## Mathematics

*College of Science, Engineering & Technology*

*Department of Mathematics and Statistics*

273 Wissink • 507-389-1453

Web site: [mnsu.edu/dept/mathstat](http://mnsu.edu/dept/mathstat)

Chair: Larry M. Pearson

Ernest Boyd, Maureen H. Fenrick, Francis T. Hannick, Kil S. Lee, Namyong Lee, Mary Ann Lee, R. Bruce Mericle, Mezbahur Rahman, Malcolm Lee Riddle, Gary Rockswold, Dan Singer, Chia-Chi Tung, Charles Waters, Mary Wiest

Mathematics in its purest form is an art concerned with ideas. The Department of Mathematics believes that an undergraduate major should be both an introduction to

more advanced study and a survey of the many facets of mathematics. From the profound insights of Thales to the undecidability of Godel, from the intuitive to the rigorous, from the abstract to the applied, with a solid emphasis on both the discrete and the continuous cases, the department expects all majors to be engaged in a wide range of mathematical ideas.

Unlike many other disciplines, mathematics is a very structured subject. Consequently, the curriculum consists of sequences of interrelated courses which must be taken in the appropriate order. The department expects that the well prepared student will complete the mathematics major in four years.

The courses in mathematics are organized with the needs of three groups of students in mind: (1) those interested in mathematics as a major field of study who may be planning more advanced study in the field, preparing to teach or intending to use their skill in business, industry or government; (2) those needing mathematics primarily as a tool in other disciplines (some special courses and sequences are provided to better meet this need); and (3) those interested in the logical and cultural aspects of mathematics as an element in their general education.

**Admission to Major** is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C), including 8 credits in mathematics, MATH 121 or higher, with a 2.5 GPA in mathematics.

Contact the department for application procedures.

### MATH BA, BS

#### Required for Major (Core, 27-28 credits):

MATH 121	Calculus I (4)
MATH 122	Calculus II (4)
MATH 223	Calculus III (4)
MATH 247	Linear Algebra I (4)
MATH 290	Foundations of Mathematics (4)

Choose two from the following:

MATH 316	Intermediate Analysis (3)
MATH 345	Abstract Algebra I (4)
MATH 375	Intro to Discrete Mathematics (4)

#### Required for Major (Electives, 15 credits):

Choose a minimum of 15 credits from the following; at least three (3) credits must be at the 400 level:

MATH 316	MATH 321	MATH 332
MATH 345	MATH 354	MATH 375
MATH 392	MATH 411	MATH 417
MATH 418	MATH 422	MATH 425
MATH 435	MATH 442	MATH 446
MATH 447	MATH 455	MATH 456
MATH 470	MATH 471	MATH 480
MATH 496		

#### Required for Bachelor of Arts (BA) degree ONLY:

Language (8)

**Required Minor. Yes. Any.**

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## Mathematics

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### MATH BS TEACHING

**Required for Major (Core, 50 credits):**

MATH	121	Calculus I (4)
MATH	122	Calculus II (4)
MATH	223	Calculus III (4)
MATH	247	Linear Algebra I (4)
MATH	290	Foundations of Mathematics (4)
MATH	316	Intermediate Analysis (3)
MATH	332	College Geometry (4)
MATH	345	Abstract Algebra I (4)
MATH	354	Concepts of Probability and Statistics (3)
MATH	375	Intro. to Discrete Mathematics (4)
MATH	480	History of Mathematics (3)
MATH	483	Advanced Viewpoint of 5-8 School Mathematics (3)
MATH	484	Technology in 5-12 School Mathematics (3)
MATH	485	Teaching Secondary School Mathematics (3)

**Required for Major (Professional Education, 30 credits):**

See the SECONDARY EDUCATION section for admission requirements to Professional Education and a list of required professional education courses.

**Required Minor: No.****MATH BA, BS MINOR****Required for Minor (Core, 12 credits):**

MATH	121	Calculus I (4)
MATH	122	Calculus II (4)
MATH	247	Linear Algebra I (4)

**Required for Minor (Electives, 7 credits):**

Choose 7 credits from any courses listed for the BA and BS major.

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### POLICIES/INFORMATION

**GPA Policy.** Mathematics majors or minors must earn a grade of C or better in all courses applied to the major or minor.

**P/N Grading Policy.** Not more than one-fourth of the credits in mathematics courses numbered 121 or above can be taken under P/N and applied to a major or minor. All 300- and 400-level courses are offered for grade only with the exception of MATH 487, 498, and 499 which are available for both P/N and letter grade.

**Credit by Examination.** Credit by examination will not be approved for courses in which a student has already received a grade.

**Credit Limitations.** A student may accumulate a maximum of six credits from MATH 110 and the College Level Examination Program (CLEP). After completing MATH 122 with a grade of C or better, a student may not receive credit for MATH 110, 112, 113, 115, or 180 without the consent of the department. Since the following courses have some common content, credit is not allowed for both MATH 115 and either MATH 112 or MATH 113. A student may not receive credit for MATH 354 after completing MATH 455 or STAT 455.

**Advising Procedure for Freshman Mathematics Courses.**

Students may register for freshman mathematics courses at several different levels (094, 098, 110, 112, 113, 115, 121 or higher) depending on their background and interest in mathematics. Students registering for one of the above courses may be given a mathematics placement test. The result of this test is used as an aid in the selection of the appropriate course for each student. For placement advising prior to registration, students may contact the Mathematics and Statistics Department, the college student relations coordinator or their advisor.

**Advising Suggestions.** A person with a major in mathematics is encouraged to have a significant concentration in an area of recognized application. By proper selection of electives and willingness to exceed the required minimum number of credits for graduation, a student may earn a second major in fields such as accounting, business administration, biology, chemistry, computer science, economics, environmental sciences, geography, or physics.

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### COURSE DESCRIPTIONS

**094 (4) Essential Mathematics with Elementary Algebra**

Basic mathematics skills integrating the fundamental operations of whole numbers, integers, fractions, decimals, percents, ratio and proportion with the elementary algebra topics of linear equations and inequalities, graphs, exponents, polynomials and factoring. Credit does not apply toward graduation. P/N only. F, S

**098 (4) Intermediate Algebra**

Topics covered include intermediate study of graphs, systems of linear equations, introduction to functions, linear and nonlinear inequalities, factoring, rational expressions and equations, radicals, and basic quadratic equations. Credit does not apply toward graduation. P/N only. F, S

**110 (3) Perspectives in Mathematics**

A survey of mathematics and its relationship to society, showing its development and evolution to meet the needs of mankind.

Pre: Three years high school algebra/geometry or MATH 098 F, S

**112 (4) College Algebra**

Concepts of algebra (real numbers, exponents, polynomials, rational expressions), equations and inequalities, functions and graphs, polynomial and rational functions, exponential and logarithmic functions, systems of equations and inequalities, matrices and determinants, conic sections, sequences and series, probability, and binomial theorem.

Pre: Must meet the required standard on MnSCU Math Readiness Test, or having achieved an ACT Math subscore of 20 or higher, or MATH 098. F, S

**113 (3) Trigonometry**

Basic concepts of trigonometry as preparation for college level mathematics and science course work. Top-

ics include concepts of algebra (real numbers, functions, graphs of functions, exponential and logarithmic functions), trigonometric functions, analytic trigonometry, applications of trigonometry, and analytic geometry.

Pre: Three years of high school algebra/geometry or MATH 098 F, S

#### 115 (4) Precalculus Mathematics

This course will cover topics of precalculus mathematics. Topics covered will include functions, graphs of functions, exponential and logarithmic functions, conic sections, systems of equations and inequalities, matrices, trigonometric functions, circular functions, vectors and complex numbers, induction, series, and probability.

Pre: four years high school mathematics or equivalent F, S

#### 121 (4) Calculus I

Limits, continuity, the derivative and applications, and the integral and applications.

Pre: MATH 115 or both 112 and 113 with C or better or consent F, S

#### 122 (4) Calculus II

Transcendental functions, L'Hopital's rule, techniques of integration, sequences and series, parametric equations and polar coordinates, and vectors in two and three dimensions.

Pre: MATH 121 with C or better or consent F, S

#### 127 (2) Calculus II for Engineering Technology: Integration

A continuation of the study of calculus from MATH 121 including transcendental functions, L'Hopital's rule, techniques of integration, and vectors in two and three dimensions. Content is intended for students enrolled in any engineering technology program. Credit for both MATH 127 and MATH 122 is not allowed.

Pre: MATH 121 with C or better or consent S

#### 128 (2) Calculus II for Engineering Technology: Infinite Series

A continuation of the study of calculus from MATH 127 including infinite series, parametric equations, and polar coordinates. Content is intended for students enrolled in any engineering technology program. Credit for both MATH 128 and MATH 122 is not allowed.

Pre: MATH 127 with C or better or consent S

#### 130 (3) Finite Mathematics and Its Application

This course is an introduction to the mathematical concepts needed in business, the social sciences, and the life sciences including problem solving and linear models, linear algebra, linear programming, consumer mathematics, probability and statistics, and decision making.

Pre: Three years of high school mathematics

#### 180 (4) Mathematics for Computer Science

This course is an introduction to the mathematical concepts needed in computer science, including sets, logic, representations of numbers, counting techniques, discrete functions, matrices, trees and graphs, and algorithm analysis.

Pre: MATH 112 or equivalent F, S

#### 181 (3) Intuitive Calculus

This course presents the concepts of the differential and integral calculus from an intuitive (non-theoretical) point of view. The course emphasis is on the applications of the calculus to the fields of business and economics.

Pre: MATH 112 ALT-S

#### 184 (3) Mathematical Reasoning

Designed to increase a student's ability to reason quantitatively and to communicate mathematics effectively through verbal, graphical, and symbolic forms. The acquisition of both mathematical skills and higher-order thinking are learning outcomes. Students will learn how technology can be used to solve mathematical problems. An integral part of this course is student interpretation and evaluation of real-data models and contemporary applications. Students will learn modeling strategies and relevant historical perspectives of mathematics.

Pre: Three years of high school mathematics

#### 199 (4-9) CLEP Mathematics

#### 201 (3) Elements of Mathematics I

Nature of mathematics from a problem solving approach using sets, relations, number systems through integers, rational numbers and discrete mathematics.

Pre: Three years of high school algebra/geometry or MATH 098 F, S

#### 202 (3) Elements of Mathematics II

A continuation of MATH 201, including rational and real number systems, informal geometry and measurement, statistics, and probability.

Pre: MATH 201 F, S

#### 223 (4) Calculus III

Surfaces, vector-valued functions, partial differentiation, multiple integration, and vector calculus.

Pre: MATH 122 with C or better, or consent F, S

#### 247 (4) Linear Algebra I

Matrices, determinants, systems of linear equations, vector spaces, linear transformations, and characteristic value problems.

Pre: MATH 122 F, S

#### 290 (4) Foundations of Mathematics

Logic, proof techniques, set theory, relations, functions, cardinality, operations, and an introduction to mathematical structures and number theory.

Pre: MATH 247 F, S

#### 303 (3) Elements of Mathematics III

Transformational and Euclidean geometry, coordinate geometry and applications of discrete mathematics.

Pre: MATH 202 ALT-S

#### 316 (3) Intermediate Analysis

Limits, sequences, continuity, and differentiation of a real valued function of a real variable.

Pre: MATH 223 and 290 S

#### 321 (4) Ordinary Differential Equations

This course presents the theory, computations, and ap-

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## Mathematics

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plications of first and second order differential equations and two-dimensional systems.

Pre: MATH 122 F, S

### 332 (4) College Geometry

This course covers several geometric systems including Euclidean, non-Euclidean, transformational and projective. Other topics studied are topological properties and the relationship between coordinate and synthetic geometry.

Pre: MATH 290 F

### 345 (4) Abstract Algebra I

An introduction to the theory of groups and rings; including polynomial rings, homomorphisms, isomorphisms, and concepts of normal subgroups, ideals, quotient groups, and quotient rings.

Pre: MATH 290 F

### 354 (3) Concepts of Probability and Statistics

This is a calculus-based course covering introductory level topics of probability and statistics. It is designed to meet the needs of both the practitioner and the person who plans further in-depth study. Topics include probability, random variables and probability distributions, joint probability distributions, statistical inference (both estimation and hypothesis testing), analysis of variance, regression, and correlation. Same as STAT 354.

Pre: MATH 122 F, S

### 375 (4) Introduction to Discrete Mathematics

An introduction to the concepts fundamental to the analysis of algorithms and their realization. Topics will include combinatorics, generating functions, recurrence relations, graph theory, and networks.

Pre: MATH 180 or 290 or consent S

### 392 (4) Topology of Euclidean Spaces

Metric spaces, topology of metric spaces, continuity, compactness in metric spaces, and Euclidean  $n$ -space.

Pre: MATH 290 ALT-F

### 411 (4) Introduction to Complex Variables

Algebra and geometry of complex numbers, analytic functions, power series, Cauchy's theorem and residue theorem.

Pre: MATH 223 and 290 ALT-S

### 417 (3) Real Analysis I

Limits and continuity, sequences and series, differentiation and integration.

Pre: MATH 223 and 290 F

### 418 (3) Real Analysis II

Topology of Euclidean spaces, continuous functions, sequences of functions and differentiable mappings.

Pre: MATH 417 S

### 422 (4) Partial Differential Equations

This course presents the theory, computations, and applications of partial differential equations and Fourier series.

Pre: MATH 223 and 321 ALT-S

### 425 (4) Mathematical Modeling

This course presents topics from mathematical analysis of both discrete and continuous models taken from prob-

lems in the natural sciences, economics and resource management.

Pre: MATH 223 and 247 ALT-S

### 435 (4) Modern Geometry

Geometry of spaces including Euclidean and non-Euclidean and applications of contemporary geometry.

Pre: MATH 332 or consent ALT-S

### 442 (4) Theory of Numbers

Euclidean algorithm, primes, composites, number theoretic functions, congruencies, Diophantine equations, Euler and Fermat theorems, algebraic number fields.

Pre: MATH 345 ALT-F

### 446 (4) Abstract Algebra II

A continuation of MATH 345. The course will include topics from groups, rings, and fields.

Pre: MATH 345 S

### 447 (3) Linear Algebra II

An in-depth study of linear operators and their related spaces, dimension, rank, matrix representation of linear operators, special matrices, determinants, eigenvectors and eigenvalues.

Pre: MATH 345 or consent F

### 455 (4) Theory of Statistics I

A mathematical approach to statistics with derivation of theoretical results and of basic techniques used in applications. Includes probability, continuous probability distributions, multivariate distributions, functions of random variables, central limit theorem and statistical inference. Same as STAT 455.

Pre: MATH 223 F

### 456 (4) Theory of Statistics II

A mathematical approach to statistics with derivation of theoretical results and of basic techniques used in applications, including sufficient statistics, additional statistical inference, theory of statistical tests, inferences about normal models and nonparametric methods. Same as STAT 456

Pre: MATH/STAT 455 S

### 470 (4) Numerical Analysis I

This course provides an introduction to techniques and analysis involved with solving mathematical problems using technology. Topics included are errors in computation, solutions of linear and nonlinear equations, numerical differentiation and integration, and interpolation.

Pre: MATH 122, 247, and familiarity with a programming language F

### 471 (4) Numerical Analysis II

This course is a continuation of MATH 470. Topics included are the algebraic eigenvalue problem, least-squares approximation, solutions of systems of nonlinear equations, numerical solutions of ordinary differential equations.

Pre: MATH 470 and 223 S

### 480 (3) History of Mathematics

The development of selected topics from before the Hel-



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## Mechanical Engineering

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lenistic time period to the late twentieth century. Familiarity with the content of HIST 180 is beneficial.

Pre: MATH 345 S

### **483 (3) Advanced Viewpoint of 5-8 School Mathematics**

Advanced viewpoint of mathematics content and learning theories, teaching strategies, reading strategies, assessments, and planning, teaching and reflecting on grades 5-8 mathematics. Field experiences in grades 5-8 mathematics classroom required.

Pre: MATH 290 S

### **484 (3) Technology in 5-12 School Mathematics**

Numerical, verbal, symbolic and graphical representations of quantitative relationships, concatenations in written mathematics, problem solving, dynamic geometry, perspective drawing, parametric equations, geometric probability, transition matrices, statistics and calculus using technology.

Pre: MATH 290 F

### **485 (3) Teaching Secondary School Mathematics**

Learning theories, teaching strategies, assessments and planning, teaching and reflecting on secondary (grades 9-12) school mathematics. Field experiences in grades 9-12 mathematics classroom required.

Pre: MATH 290 F

### **487 (1) Teaching Experiences in Mathematics**

Student will work with an experienced member of the faculty in teaching a college mathematics course.

### **488 (1-3) Seminar**

A course of study in which a group of students study a topic by examining results through reports and discussions. May be repeated for credit on each new topic.

### **490 (1-4) Workshop**

A short course devoted to a specific mathematical topic. May be repeated for credit on each new topic.

### **491 (1-4) Inservice**

A course designed to upgrade the qualifications of persons on-the-job. May be repeated for credit on each new topic.

### **495 (1-4) Selected Topics**

A course in an area of mathematics not regularly offered. May be repeated for credit on each new topic.

### **496 (3) Mathematical Logic**

Propositional logic, first and second order logic, completeness, consistency, models of theories, Godel's Incompleteness theorem.

Pre: MATH 345 and PHIL 411 ALT-F

### **498 (1-12) Internship**

Provides a student the opportunity to gain expertise and experience in a special field under the supervision of a qualified person.

### **499 (1-4) Individual Study**

Independent individual study under the guidance and direction of a faculty member in mathematics. Special arrangements must be made with an appropriate faculty member. May be repeated for credit on each new topic.

## Mechanical Engineering

*College of Science, Engineering & Technology  
Department of Mechanical and Civil Engineering  
205 Trafton Science Center E  
Phone: 507-389-6383  
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Web site: www.me.mnsu.edu*

Chair: Saeed Moaveni, Ph.D., P.E.

Vance Browne, Ph.D., P.E., Karen C. Chou, Ph.D., P.E.,  
Jerzy Fiszdon, Ph.D., P.E., Charles W. Johnson, Ph.D.,  
P.E., Vojin Nikolic, Ph.D.

Mechanical engineering (ME) is essential to a wide range of activities that include the research, design, development, manufacture, management, and control of engineering systems, subsystems, and their components.

Mechanical engineers use the fundamentals of engineering mechanics, energy, thermal-fluid sciences and material sciences to design and analyze mechanical systems that perform useful tasks required by society. For example, mechanical engineers work with the design and function of machines, devices, and structures in the areas of manufacturing, processing, power generation, and transportation (air, land, sea and space). As a result of a rapidly expanding technology in recent years, mechanical engineers have become more versed in computer-aided design; robotics; bioengineering; environmental engineering; solar, wind, and ocean energy sources; and space exploration. The breadth of the field provides the graduate with many possibilities for a satisfying career.

Typically, mechanical engineers are employed by the manufacturing, power, aerospace, automotive, computer hardware and software, and processing industries. Careers are also available in design and development organizations as well as in many federal and state agencies. The department will make any reasonable effort to accommodate people with disabilities.

The Mechanical Engineering program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

**Program Mission Statement:** The Mission of the Mechanical Engineering program at Minnesota State University, Mankato is to provide a broad based education that will allow students to attain the knowledge and communication skills necessary to join any area of Mechanical Engineering profession to serve the needs of the State of Minnesota and the Nation. The program also provides students with the necessary background to pursue graduate studies in Mechanical Engineering.

**Goals and Objectives:** Goals and objectives are attributes necessary to achieve a mission. The Mechanical Engineering program at Minnesota State University have identified the following goals and objectives to meet its mission:

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## Mechanical Engineering

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1. To provide high quality learning environment.
2. To provide highly competent and dedicated faculty.
3. To attract motivated students to the program.
4. To provide modern teaching and laboratory equipment and facilities.
5. To provide professional courses to achieve proficiency in thermal/fluid and solid/structural areas.
6. To provide opportunities for students to acquire communication, interactive and managerial skills.
7. To provide strong hands-on laboratory experience.
8. To provide opportunity for professional practices including ethical, safe and professional conduct.
9. To foster strong bonds of faculty-students interaction through extracurricular activities such as ASME, personal advising and consultation.
10. To foster an appreciation for professional development and life long learning.

These goals and objectives are fully compatible with the mission of Minnesota State University, Mankato and the College of Science, Engineering and Technology. Goals and objectives are monitored by the constituencies (mechanical engineering profession through the program's Advisory Board and employers, students and alumni) of the program. The Advisory Board meets regularly and provides guidance, input, and feedback.

Other important features of mechanical engineering program at Minnesota State University, Mankato include the following:

- Students are strongly encouraged to take the Fundamentals of Engineering exam in their senior year - a precursor to professional registration.
- Students are encouraged to work in engineering related areas for exposure to industrial practice. Internships are strongly recommended.
- Senior students must participate in a full academic year design experience working in a team similar to development teams in industry and government. Industrial sponsored projects are offered when available.

Recommended high school preparation is two years of algebra, one year of geometry, one-half year of trigonometry, one-half year of college algebra, and a year each of physics and chemistry. Engineering drafting and a computer language such as BASIC are also recommended. Without this background it may take longer than four years to earn the degree.

**Admission to Major** is necessary before enrolling in 300- and 400-level courses. Admission to program is granted by the department. Near the end of the sophomore year, students should submit applications for admission to the mechanical engineering program. Application to the program may be obtained from the Department of Mechanical and Civil Engineering or downloaded from the department homepage.

Admission to the program is based on GPA and performance in selected courses and is subject to approval by

the Department of Mechanical and Civil Engineering. Only students admitted to the program are permitted to enroll in upper-division ME courses. No transfer credits are allowed for upper-division ME courses. For any exceptions to this policy, special written permission must be obtained and will be reviewed by the department. The department makes a special effort to accommodate transfer students. Transfer students are encouraged to contact the department as soon as possible to facilitate a smooth transition. If local information is insufficient, write, call or visit the department.

Before being admitted to upper division mechanical engineering courses, a student must complete a minimum of 50 credits, including the following courses: General Physics (calculus based) 10 credits; Calculus and Differential Equations 16 credits; Introduction to Engineering 2 credits; Computer Science (C++ or FORTRAN) 2 credits; Introduction to Engineering Design 1 credits.; Engineering Mechanics (Statics and Dynamics) 6 credits; Electrical Engineering (Circuits, including lab) 4 credits; Chemistry 5 credits; and English Composition I 4 credits.

For transfer students the distribution of credits specified in the previous paragraph may vary, but the total credits must satisfy departmental transfer requirements. Transfer students should contact department for individual evaluation.

All courses and credits shown above must be completed before enrollment in 300-level engineering courses. All of the above courses except Introduction to Engineering and any internship credits must be taken for "grade". It is not acceptable for the student to take any of these courses on a pass/no credit basis. A grade of "C" or better must be achieved in each course. To be considered for admission, the student must have a cumulative GPA of 2.5 for all science, math, ME and EE courses. Admission to the Mechanical Engineering Program is selective and subject to approval of the Mechanical Engineering Academic Standards Committee. Failure to submit an application could result in the student being denied admission to the program and registration in junior or higher level classes in the ME program. If a student is denied admission to the Mechanical Engineering Program, he/she can reapply to the program for admission in subsequent years. If the applicant has attended Minnesota State University, Mankato only the application form is submitted to the Mechanical and Civil Engineering Department along with a copy of that student's MSU transcript obtained from "The Hub". Pre-engineering students at MSU are not guaranteed admission to the junior-level ME Program. If the applicant has any transfer credits from another college or university, or expects to be admitted as a transfer student, all transfer courses/credits must be evaluated by the Office of Admissions at Minnesota State University, Mankato. The transfer student will need to refer to the Supplemental Information and/or the Minnesota State University, Mankato Undergraduate Bulletin for information about procedures that need to be followed when

## Mechanical Engineering

making application for admission as a transfer student. Applicants for admission to the program must also submit a complete plan of study.

### MECHANICAL ENGINEERING BS

#### Required (Special General Education, 23 credits):

The Bachelor of Science in Mechanical Engineering degree does NOT adhere to the 44 credits of general education required by other colleges. Rather, it requires a special distribution of communication, humanities and social science courses. Courses should be chosen to simultaneously satisfy the university cultural diversity requirement.

#### Required Communication Courses (7 credits):

ENG 101	Composition (4)	<b>and</b>
SPEE 102	Public Speaking (3)	<b>or</b>
SPEE 233	Public Speaking for Technical Professions (3)	<b>or</b>
ENG 271	Technical Communication (4)	

#### Required Humanities and Social Science Courses (minimum 16 credits):

In the interest of making engineers fully aware of their social responsibilities and better able to consider related factors in the decision-making process, course work in the humanities and social sciences is required as an integral part of our mechanical engineering program. To satisfy this requirement, the course selected must provide both breadth and depth and not be limited to a selection of unrelated introductory courses. Not all courses in humanities and social sciences are acceptable, i.e. skill developing courses are not acceptable. Courses should be chosen to simultaneously satisfy the university cultural diversity requirement. Each student should discuss with his/her mechanical engineering advisor selection of courses to meet this requirement. All students are urged to discuss this plan with their mechanical engineering advisors early in their academic career. An updated list of acceptable courses is posted in the department office.

Specifically, the minimum requirements consist of (a) three credits of microeconomics or macroeconomics, (b) at least 6 credits in the humanities area, and (c) at least 6 credits in the social science area; again, (a), (b), and (c) must total at least 16 credits.

To provide the measure of depth to the course of study, at least three credits at the 300 level or above must be included in the 16 credit requirement. At least one upper-division course must follow in the same subject area.

#### Required for Major (Prerequisites, 46 credits):

##### Mathematics (16 credits):

MATH 121	Calculus I (4)
MATH 122	Calculus II (4)
MATH 223	Calculus III (4)
MATH 321	Ordinary Differential Equations (4)

##### Physics (10 credits):

PHYS 221	General Physics I (5)
PHYS 222	General Physics II (5)

##### Computer Science (2 credits):

COMS 171	Introduction to C++ Programming (2)
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##### Chemistry (5 credits):

CHEM 201	General Chemistry I (5)
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##### Electrical Engineering (5 credits):

EE 101	Introduction to Engineering I (1)
EE 230	Circuits Analysis I (3)
EE 240	Evaluation of Circuits (1)

##### Mechanical Engineering (8 credits):

ME 103	Introduction to Engineering III (1)
ME 201	Introduction to Engineering Design (1)
ME 212	Statics (3)
ME 214	Dynamics (3)

#### Required for Major (53 credits):

EE 244	Introduction to Digital Systems (2)
EE 253	Logic Circuits Lab (1)
ME 206	Materials Science (3)
ME 223	Mechanics of Materials (3)
ME 241	Thermodynamics (3)
ME 291	Engineering Analysis (3)
ME 321	Fluid Mechanics (3)
ME 324	Heat Transfer (3)
ME 329	Applied Thermodynamics (3)
ME 333	Manufacturing Processes (3)
ME 336	Mechanical Engineering Experimentation I (2)
ME 341	Linear Systems (3)
ME 417	Design of Machine Elements (3)
ME 420	Computer-Aided Engineering (4)
ME 428	Design Project I (3)
ME 436	Mechanical Engineering Experimentation II (2)
ME 438	Design Project II (3)
ME 463	Automatic Controls (3)
ME 466	Mechanical Engineering Experimentation III (2)
ME 492	Mechanical Engineering Seminar (1)

#### Required for Major (Electives, 6 credits):

Consult with your advisor for selection of electives:

ME Elective

ME Elective

#### Required Minor: None.

### POLICIES/INFORMATION

**GPA Policy.** To maintain satisfactory progress in the upper-division mechanical engineering program, a student must: (1) maintain a cumulative GPA of at least 2.3; and (2) achieve a GPA of at least 2.0 each semester.

**P/N Grading Policy.** P/N credit may not be applied to any 200-level or higher required course in the mechanical engineering curriculum except for internship credits and courses designated as P/N only.

**Probation Policy.** A student who does not maintain satisfactory progress as defined above will be placed on academic probationary status for a maximum of one semester. During the probationary period, the student must maintain satisfactory progress and in addition: (a) must

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## Mechanical Engineering

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complete at least 8 credits for grade from the prescribed ME curriculum; and (b) shall not receive a degree without first conforming to the satisfactory progress criteria. A student who does not maintain satisfactory progress during the probationary period will not be allowed to continue in the program. The student may later reapply for admission to the program.

Refer to the College regarding required advising for students on academic probation.

**Appeals.** A student has the right to appeal a department decision in writing. The department will consider such appeals individually.

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### COURSE DESCRIPTIONS

#### **101 (1) Introduction to Engineering**

Historical and global perspectives, engineering discipline and functions, professional aspects of engineering, ethical aspects of engineering, creativity and innovation, basics of personal computers—word processing and spreadsheets, introduction to problem solving. V

#### **102 (1) Introduction to Engineering II**

A continuation of ME 101 covering historical and global perspectives, engineering discipline and functions, professional aspects of engineering, ethical aspects of engineering, creativity and innovation, basics of personal computers—word processing and spreadsheets, introduction to problem solving. V

#### **103 (1) Introduction to Engineering III**

Basic engineering drafting principles and conventions. Orthogonal projection, isometric drawing, dimensioning, section views. Introduction to and use of computer aided modeling system. F, S

#### **201 (1) Introduction to Engineering Design**

Introduction to engineering design philosophy and methodology concentrating on increasing student's ability to prepare well-written technical communication and to define problem and generate and evaluate ideas. Teaming skills enhanced. A term design project is included. Pre: ME 103 F

#### **206 (3) Materials Science**

Physical principles of elastic and plastic deformation of materials. Dislocation theory. Fatigue, creep, fracture, hardness, phase diagrams and other mechanical phenomena in materials. Ceramics and composite materials. Residual stresses. Lecture and lab demonstrations. F

#### **212 (3) Statics**

Resultants of force systems, equilibrium, analysis of forces acting on structural and machine elements, friction, second moments, virtual work. Pre: PHYS 221 F

#### **214 (3) Dynamics**

Kinematics and kinetics of particles, systems of particles and rigid bodies, work-energy, linear and angular impulse-momentum, vibrations. Pre: ME 212 S

#### **223 (3) Mechanics of Materials**

Load deformation, stress, strain, stress-strain relationship, buckling, energy concepts, stress analysis of structural and machine elements.

Pre: ME 212

F, S

#### **241 (3) Thermodynamics**

Fundamental concepts of thermodynamics. Thermal properties of substances and state equations. Conservation of mass, first and second laws. Examples of applications to different engineering systems.

Pre: PHYS 222

F

#### **291 (3) Engineering Analysis**

Probability and statistics. Uncertainty, distributions. Numerical solution of algebraic, transcendental and differential equations. Numerical integration and differentiation. Some programming language required.

Coreq: MATH 321

S

#### **299 (2) Thermal Analysis**

Basic principles of thermodynamics, fluid mechanics, and heat transfer. First and second laws of thermodynamics and application to engineering systems and their design. Not for mechanical engineering major.

Pre: PHYS 222, MATH 321

S

#### **308 (2) Design Morphology**

Components of the product realization process are covered including process steps, financial analysis and project planning. Design case studies are presented. V

#### **321 (3) Fluid Mechanics**

Introduction to fluid flow, fluid properties, fluid statics, the integral and differential approach to basic flow equations. Bernoulli's equation, similitude and dimensional analysis, viscous internal and external flows, one dimensional compressible flow.

Pre: ME 214 Coreq: ME 319

F

#### **324 (3) Heat Transfer**

Steady and unsteady conduction. Free and forced convection. Heat transfer by radiation. Combined modes of heat transfer. Elements of heat exchangers design.

Pre: ME 241, ME 321

S

#### **327 (3) Mechanical Engineering Design I**

Applications of principles of mechanics to the design of various machine elements such as bearings, shafts, gears, clutches, brakes and springs. Design factors and fatigue. Design problems considering engineering calculations, manufacturability and safety.

Pre: ME 214, ME 223

V

#### **329 (3) Applied Thermodynamics**

Energy analysis and design of thermodynamic systems including power and refrigeration cycles. Thermodynamic relations. Application of thermodynamics to mixtures and solutions. Psychometrics. Introduction to chemical thermodynamics. Third law of thermodynamics.

Pre: ME 241

S

#### **331 (1) Materials Properties Lab**

Elastic and plastic deformation of materials. Fatigue and impact. Microstructure. Structural deflections.

## Mechanical Engineering

General mechanical properties of materials related to the performance of products.

Pre: ME 206, ME 223 V

### 333 (3) Manufacturing Processes

Introduction to manufacturing, tribology, casting, bulk deformation, sheet metal forming, material removal, joining, polymers, powder metals, ceramics, automation, integrated systems. Design for manufacture.

Pre: ME 206, ME 223 S

### 336 (2) Mechanical Engineering Experimentation I

Experiments in Mechanical Engineering, load-deformation, load-failure, fatigue, impact, hardness. Introduction to traditional machining and material processing.

Coreq: ME 333 S

### 341(3) Linear Systems

Analysis of linear systems in the time and frequency domains. Physical systems modeled and analyzed using time domain techniques. Fourier and Laplace Transforms.

Pre: ME 214, MATH 321, EE 230 F

### 357 (3) Mechanical Engineering Design II

Motion, velocity, acceleration, and dynamic forces in various mechanisms and machines. Design of selected mechanical motion devices. Optimum design

Pre: ME 327 V

### 414 (3) Intermediate Dynamics

Two and three dimensional kinematics, multi-degree of freedom systems, Newton's equations, impulse-momentum, energy methods, Lagrange's equations.

Pre: ME 341 V

### 415 (3) Structural Analysis

Structural analysis of determinate and indeterminate beams, trusses, frames, plates shells; influence lines, moving loads, deflection analysis. Computer assisted design of structural members.

Pre: ME 417 V

### 416 (3) Thermal/Fluid Systems Design

The application of the principles of thermodynamics, fluid mechanics, and heat transfer to the design and analysis of selected energy systems of current interest, such as nuclear, solar, geothermal, and also conventional systems. Lecture and design projects.

Pre: ME 324, ME 329 V

### 417 (3) Design of Machine Elements

Application of principles of mechanics to the design of various machine elements such as gears, bearings, springs, rivets, welding. Stresses in mechanical elements. Design factors, fatigue, manufacturability. Lectures and design projects.

Pre: ME 214, ME 223 S

### 418 (3) Mechanical Systems Design

The application of mechanics to the design and analysis of motion and force transmitting systems. Optimum design.

Pre: ME 417 V

### 420 (4) Computer Aided Engineering

Computer-aided design and introduction to the use of advanced computer codes for engineering design and analysis. Related theoretical foundations.

Pre: Senior standing in Engineering F

### 421 (3) Intermediate Fluid Mechanics

Potential flow, boundary layer flow, turbomachinery. Design aspects in fluid-flow systems. Formulation of continuity, momentum and energy equations, applications to control volumes, two-dimensional and axially symmetric potential flows.

Pre: ME 321 V

### 423 (3) Intermediate Mechanics of Materials

Stresses and deformation of curved beams, beams on elastic foundations, indeterminate problems, torsion of noncircular bars, introduction to plates and shells, thick walled cylinders, failure theories.

Pre: ME 417 V

### 424 (3) Analysis and Design of Heat Transfer Equipment

Analysis of heat and mass flow, design of heat exchangers and accompanying piping system. Methods of heat transfer enhancement, heat pipes.

Pre: ME 324 V

### 425 (3) Thermal Analysis and Control of Electronic Equipment

Thermal consideration in the design of heat-exchange equipment. Review of heat transfer modes; contact resistance; air handling. Numerical methods. Cooling techniques; fins, extended surfaces, cold plates, heat pipes, immersion cooling, thermoelectric coolers. Enhanced heat transfer.

Pre: ME 324 V

### 427 (3) Kinematics and Dynamics of Mechanisms

Computer-oriented methods of synthesis. Dynamics of mechanisms. Force and moment balancing of mechanisms; shaking forces. Term design projects.

Pre: ME 417 V

### 428 (3) Design Project I

The first course in a two semester sequence that provides a complete design experience under professional guidance. The courses covers: the product realization process, financial analysis, quality, patents, ethics and case studies. The students initiate a design project early in the semester to be completed in ME 438.

Pre: Senior standing in mechanical engineering F

### 429 (3) Energy Conversion

Methods of energy conversion. Topics may include hydroelectric, geothermal, wind and solar power generation, as well as unconventional methods of energy conversion. Term design problems.

Pre: ME 324, ME 329 V

### 430 (3) Dynamics of Machinery

Force transmissibility, bearing reactions, applications to cams, flywheels, gear linkages, shaking forces, balancing, isolators, critical speeds. Term design problems.

Pre: ME 417 V



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## Mechanical Engineering

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### **433 (3) Design for Manufacture and Assembly**

Current design for assembly (DFA) techniques are discussed. Both “manual” and software approaches are utilized, and enforced with numerous examples. Design for manufacturability (DFM) is addressed for many common manufacturing processes including: sheet metal, casting, forging, plastics, machining, snap fits, elastomers, surface finishes/protective finishes, powdered metal, and extrusions. Recent DFM software is utilized. Class project required.

### **434 (3) Computer Control of Manufacturing Systems**

A study of the principles, techniques, and applications of computer numerically controlled machine tools. The planning, use, expansion, and updating of computerized systems to meet the needs of industry. An introduction to Computer Aided Manufacturing (CAM) systems.

Pre: Senior standing in Engineering V

### **436 (2) Mechanical Engineering Experimentation II**

Experimental and analytical studies of phenomena and performance of fluid flow, heat transfer, thermodynamics, refrigeration and mechanical power systems.

Pre: ME 324, ME 329 F

### **438 (3) Design Project II**

The second course of a two semester sequence, taken the semester in which the student expects to graduate. These two courses provide a complete design experience. This course includes: completion of the design project, design presentations, design report, design evaluations and manuals.

Pre: ME 428 S

### **439 (3) Air Conditioning and Refrigeration**

Refrigeration cycles and equipment, refrigerant properties, heating and cooling loads, psychometric analysis of air conditioning. Distribution of air conditioning medium and air quality as applied to design.

Pre: ME 324 ME 329 V

### **441 (3) Vehicle Dynamics**

The dynamics of ground vehicles is studied, including pneumatic tires, vehicle handling, vehicle performance (including transmissions), modeling & simulation, and current research topics such as ITS/AVCS (Intelligent Transportation Systems Program/Advanced Vehicle Control Systems). Emphasis is on fundamentals, simulation, and limited experimentation. Class project required.

Pre: Senior standing in Mechanical Engineering

### **443 (3) Theory of Elasticity**

Fundamental equations of elasticity in three dimensions, plane stress and plane strain, flexure and torsion of bars of various shapes.

Pre: ME 223 V

### **446 (1) Senior Mechanical Engineering Laboratory**

Application of the engineering sciences and the principles of measurement to the evaluation of operating characteristics of mechanical equipment and systems. Design of measurement systems. Collection, analysis, and interpretation

of the data and the presentation of the results.

Pre: Senior standing in Mechanical Engineering V

### **450 (3) Finite Element Method**

Energy and residual methods, 2D and 3D problems in stress analysis. Application of steady and transient heat flow, hydrodynamics, creeping flow.

Pre: ME 223 and ME 324 or instructor consent V

### **462 (3) Vibrations**

Free and forced vibration in linear single degree of freedom systems, design and analysis of multiple degree of freedom systems with and without damping, vibration of coupled systems.

Pre: ME 341 V

### **463 (3) Automatic Controls**

Analysis of control systems using the methods of Evans, Nyquist and Bode. Improvement of system performance by feedback compensation. Introduction to digital control.

Pre: ME 341 F

### **464 (3) Mechatronics**

Synergistic combination of mechanical engineering, electronics, controls and programming in the design of mechatronic systems. Sensors, actuators and microcontrollers. Survey of the contemporary use of embedded microcontrollers in mechanical systems, case studies.

Pre: ME 417, 463

### **466 (2) Mechanical Engineering Experimentation III**

Experiments in vibrations: Motion measurement, force measurement, free vibration, frequency response, impact response, noise, signal processing. Experiments in control: system modelling and characterization in the time and frequency domains, feedback and compensation, PID control, control of velocity and position.

Pre: ME 463 S

### **471 (3) Production Tool Design**

Classroom discussions and actual design projects are combined to gain knowledge and experience necessary to design tools commonly used in modern manufacturing processes. Course consists of designing tools, gages, simple jigs, fixtures, punches and dies as employed in mass production processes.

Pre: Senior standing in Engineering V

### **491 (1-4) In-Service**

V

### **492 (1) Mechanical Engineering Seminar**

To acquaint students with various engineering careers, various industries, and various societal and ethical problems.

Pre: Senior standing in Mechanical Engineering

V

### **497 (1-6) Internship**

V

### **499 (1-6) Individual Study**

V

### Military Science/ROTC

*College of Education*

*Department of Military Science/Reserve Officers' Training Corps (Army ROTC)*

316 Wiecking Center • 507-389-6226/6220

Chair: Lt. Col. Arthur Sepeta

Maj. Eric Andringa, Capt. Jerad Harper, Capt. Neil Huotari, Sgt. Bart Bottoms, Jean Andresen, Scott Forsyth, Lori Olinger

The Military Science Department offers either a two- or four-year program enabling students/cadets to compete for a commission as an officer in the United States Army, Army Reserve, or Army National Guard. University credit is awarded for the courses in the program. However, the Military Science program is not an academic major. Students must complete an academic major in another area in addition to the military science requirements.

An academic minor in military science is available; however, the minor is limited to ROTC cadets who have contracted with Cadet Command.

#### MILITARY SCIENCE MINOR

##### **Required for Minor (General Education, 9 credits):**

HIST 153 War and Peace in the 20th Century (3)  
POL 111 United States Government (3)  
SPEE 102 Public Speaking (3)

##### **Required for Minor (Core, 13 credits):**

MSCI 210 Army Physical Fitness Training (1)  
MSCI 301 Light Leader Development I (3)  
MSCI 302 Light Leader Development II (3)  
MSCI 401 Implementation of Leadership (3)  
MSCI 402 Mentorship and Application (3)  
MSCI 403 Application of Physical Conditioning (1)

The four-year Army ROTC curriculum develops the student's leadership, managerial and organizational abilities. Integration with other related academic programs such as political science, history, business and geography develop well-rounded professional officers for the Army. Leadership skills acquired through ROTC and the practical application of skills provided in the program transfer easily to civilian career goals. ROTC graduates traditionally enter industrial and business career fields with a significant competitive edge.

The program consists of two parts: the basic course and the advanced course. The basic course usually occurs the freshman and sophomore years and students incur no military obligation. After completing the basic course, students may enroll in the advanced course. In order to enroll, students must also execute an enlistment contract with Cadet Command. Additionally, students with military basic training experience may receive advanced placement credit into the ROTC ad-

vanced course. The advanced course must be taken after students receive academic junior status. All cadets receive uniforms and the necessary textbooks for military science classes. Also, all contracted cadets will receive a living allowance of at least \$250 each academic month of the school year.

#### MILITARY SCIENCE/ARMY ROTC

##### **4-YEAR PROGRAM**

##### **Required General Education (6 credits):**

SPEE 102 Public Speaking (3)  
HIST 153 War and Peace in the 20th Century (3)

##### **Required Support Courses (6-8 credits)**

COMS 100 Introduction to Computer Science (4)  
Choose one of the following:  
ENG 242 Introduction to Creative Writing (2)  
ENG 270 Advanced Composition (4)

##### **Required for Program (Core, 18 credits):**

MSCI 101 Confidence Building (1)  
MSCI 102 Introduction to Leadership (1)  
MSCI 201 Leadership Development Process (2)  
MSCI 202 Survival and Confidence Building (2)  
MSCI 301 Light Leader Development I (3)  
MSCI 302 Light Leader Development II (3)  
MSCI 401 Implementation of Leadership (3)  
MSCI 402 Mentorship and Application (3)

##### **2-YEAR PROGRAM**

##### **Required General Education (6 credits):**

SPEE 102 Public Speaking (3)  
HIST 153 War and Peace in the 20th Century (3)

##### **Required Support Courses (6-8 credits)**

COMS 100 Introduction to Computer Science (4)  
Choose one of the following:  
ENG 242 Introduction to Creative Writing (2)  
ENG 270 Advanced Composition (4)

##### **Required for Program (Core, 12 credits):**

MSCI 301 Light Leader Development I (3)  
MSCI 302 Light Leader Development II (3)  
MSCI 401 Implementation of Leadership (3)  
MSCI 402 Mentorship and Application (3)

#### POLICIES/INFORMATION

**GPA Policy.** Students must earn a minimum GPA of 2.0 (C) in the courses taken from the military science department in order to meet graduation and/or commissioning requirements.

**P/N Grading Policy.** No classes offered by the military science department consist of P/N grades.

**Leadership Laboratories.** All contracted cadets are required to attend (1) four-hour leadership laboratory each month. Specifics are outlined in each course syllabus. A weekend field training exercise is also conducted each semester.

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## Military Science/ROTC

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**Leader's Training Course.** During the summer between the sophomore and junior years, students who have **NOT** completed the first two years of ROTC or have not previously completed military basic training may attend this five-week internship. This qualifies the student to enter the ROTC Advanced Course. A stipend is paid for attendance.

**National Advanced Leadership Camp.** During the summer between the junior and senior years, cadets attend a five week advanced camp at Fort Lewis, WA. Cadets receive a stipend for this training; travel, room, board, uniforms, and medical care are also included. Students experience leadership positions at advanced camp, leading other ROTC cadets through a number of challenging situations, and building both stamina and self-confidence.

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### COURSE DESCRIPTIONS

#### 101 (1) Confidence Building

Build and increase self-confidence through team building activities such as physical fitness, reaction exercises, rappelling, first aid, basic land navigation/orienteering and leadership in classroom and laboratory environments. Students are introduced to basic techniques of surviving the stress of everyday college life. F

#### 102 (1) Introduction to Leadership

Continuation of MS 101 activities. Additionally, the course will focus and teach effective leadership principles. The student reinforces self-confidence through participation in physically and mentally challenging exercises geared toward developing individual and group dynamic characteristics. Communication skills to improve individual performance and group interaction are emphasized through practical application and hands on experiences. Relate organizational ethical values to the effectiveness of a leader. S

#### 201 (2) Leadership Development Process

The course will focus on the fundamentals of leadership and how they are contrasted between military and civil use. Group exercises develop individual planning and decision making skills. F

#### 202 (2) Survival and Confidence Building

Build and increase self-confidence through team building activities such as physical fitness, reaction exercises, rappelling, first aid, basic land navigation/orienteering and team dynamics. Introduction to basic fundamentals of leadership, hot and cold weather survival techniques and assessment of one's performance. Focus on practical application of leadership and survival team dynamics. S

#### 210 (1) Army Physical Fitness Training

Students will enhance individual leadership qualities, develop and organize physical training programs, and learn the advantages of being a responsive follower as well as a productive leader (ingredients of integrity and teamwork). In addition, students will achieve the highest standards of physical fitness in preparation for the Army Physical Fitness Test. This class is a prerequisite for MS 403. F, S

#### 299 (1-3) Individual Study

Department chair approval required. F, S

#### 301 (3) Light Leader Development I

Course consists of a series of practical opportunities to lead small groups, receive personal assessment, and develop skills necessary for military leadership. Students will study defensive tactics and apply those during lab periods and field training exercises. Limited to ROTC cadets who executed an enlistment contract with Cadet Command. F

#### 302 (3) Light Leader Development II

A series of practical opportunities to lead small groups, receive personal assessment and develop skills necessary for military leadership. Students will study military tactics and apply those skills during lab periods and field training exercises. Limited to ROTC cadets who executed an enlistment contract with Cadet Command. Pre: MSCI 301. S

#### 401 (3) Implementation of Leadership

Prepares students to assume command responsibility of military organizations. Students refine their personal and behavioral motivation techniques through identifying and resolving ethical dilemmas, practicing mentoring and counseling skills, and applying real world resolution techniques to problems of subordinates. The course is designed to challenge the leadership and managerial abilities. Limited to ROTC cadets who executed an enlistment contract with Cadet Command. Pre: MSCI 301, 302. F

#### 402 (3) Mentorship and Application

Students mentor and teach other Military Science students the application of leadership and managerial techniques. Students are responsible for the conduct of confidence courses, training exercises and the development of underclassmen. The class concludes with the necessary preparations that are needed to ensure a successful entry into the Army or its Reserve Components. Limited to ROTC cadets who executed an enlistment contract with Cadet Command. Pre: MSCI 301, 302, 401. S

#### 403 (1) Application of Physical Conditioning

Students plan, organize and lead individual and team oriented physical conditioning activities. These activities are geared toward the physical development and instruction of underclassmen. MS 403 students also administer fitness tests to underclassmen which measure the cardiovascular endurance and upper and lower body strengths. MS 403 students are required to successfully pass the Army Physical Fitness Test prior to the end of the semester. Prerequisite: MS 403 with MS 210. Limited to ROTC cadets who executed an enlistment contract with Cadet Command. Pre: MSCI 210 F, S

#### 499 (1-3) Individual Study

Department chair approval required. Limited to ROTC cadets who executed an enlistment contract with Cadet Command. F, S

## Music

College of Arts & Humanities

Department of Music

202 Performing Arts Center • 507-389-2118

Web site: [www.intech.mnsu.edu/music/](http://www.intech.mnsu.edu/music/)

Chair: John Lindberg

Gerard Aloisio, Stephen Bomgardner, David Dickau, Linda Duckett, Harry Dunscombe, Dale Haefner, Diana Moxness, Paul Moxness, Doug Snapp, Stewart Ross, David Viscoli

The Music Department provides the finest possible training for the prospective music teacher and professional musician and strives to enrich the lives of all university students. Professional programs are designed for music majors; general courses and many opportunities for participation in various musical groups are offered to non-majors.

**Admission to Major** is granted by the department. Minimum university admission requirements are:

1. Complete a minimum of 32 earned semester credit hours.
2. Achieve a minimum cumulative GPA of 2.00 (C).
3. To be admitted to the Bachelor of Music degree, a letter of recommendation from the student's private teacher at MSU is required.

Contact the department for application procedures.

All entering music majors should register for the following courses: MUS 100, MUS 131, MUS 2xx (Private Lesson), and MUS 1xx (Ensemble)

### Required for All Majors:

1. MUS 100 Recital Class (0 credits) each semester in residence
2. Large or Small Ensemble (1 credit) each semester in residence
3. Private Lessons (1-3 credits) according to degree requirements

**For details on these requirements, see the Undergraduate Music Handbook.**

### MUSIC BA

#### Required for Major (Core, 23 credits):

MUS 125 or 126	Pop Music USA (3)
MUS 131, 132	Theory I (8)
MUS 162	Piano Proficiency Exam (0)
MUS 221, 222	Music Literature and History I and II (6)
MUS 231, 232	Theory II (6)
Sophomore Review	

**Required for Major (Foreign Language, 8-10 credits):**  
Must complete one year of foreign language.

#### Required for Major (21 credits)

MUS 100	Recital Class (0) (each semester)
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MUS 1xx	Primary Ensemble (8)
MUS 1xx	Secondary Ensemble (4)
MUS 2xx	Private Lessons (4)
MUS 3xx	Private Lessons (2)
MUS 434	Form and Analysis (3)

#### Required for Major (Electives, 6 credits):

Choose courses from music or other departments.

Elective      Elective

#### Required Minor: Yes. Any.

### MUSIC BM

#### Required for Major (Core, 23 credits):

MUS 125 or 126	Pop Music USA (3)
MUS 131, 132	Theory I (8)
MUS 162	Piano Proficiency Exam (0)
MUS 221, 222	Music Literature and History I and II (6)
MUS 231, 232	Theory II (6)
Sophomore Review	

#### Required for Major (Options, Varies):

Choose one of the following options: Voice, Piano, Organ, or Percussion, Strings and Winds:

#### VOICE (58 credits)

XXX xxx	Foreign Language (8)
MUS 100	Recital Class (0) (each semester)
MUS 101	Concert Choir (8)
MUS 1xx	Secondary Ensemble (4)
MUS 251	Private Voice I (2 - 2 semesters at 1 credit)
MUS 251	Private Voice I (6 - 2 semesters at 3 credits)
MUS 261	Private Piano I (4)
MUS 351	Private Voice II (12 - 4 semesters at 3 credits)
MUS 401	Choral Musicianship I (3)
MUS 434	Form and Analysis (3)
MUS 451	Vocal Pedagogy and Literature (3)
MUS 455	Diction for Singers I (2)
MUS 459	The Art Song (2)
MUS 496	Senior Recital (1)

#### PIANO (40 credits)

MUS 100	Recital Class (0) (each semester)
MUS 1XX	Primary Ensemble (4)
MUS 261	Private Piano I (2 - 2 semesters at 1 credit)
MUS 261	Private Piano I (6 - 2 semesters at 3 credits)
MUS 361	Private Piano II (12 - 4 semesters at 3 credits)
MUS 461	Piano Pedagogy (1)
MUS 462	Piano Literature (3)
MUS 496	Senior Recital (1)

Choose eight credits from the following:

MUS 1xx	Primary or Secondary Ensemble (8)
MUS 219	Piano Accompanying (8)

Choose one course from the following:

MUS 401	Choral Musicianship I (3)
MUS 411	Instrumental Musicianship I (3)

#### Required for Piano (Electives, 12 credits):

Choose an additional 12 credits of Music in theory, his-

## Music

tory, music education, or MIDI:

MUS xxx MUS xxx MUS xxx MUS xxx

### **ORGAN (45 credits)**

MUS 100 Recital Class (0) (each semester)  
 MUS 1xx Primary Ensemble (4)  
 MUS 265 Private Organ I (2 - 2 semesters at 1 credit)  
 MUS 265 Private Organ I (6 - 2 semesters at 3 credits)  
 MUS 365 Private Organ II (12 - 4 semesters at 3 credits)  
 MUS 401 Choral Musicianship I (3)  
 MUS 433 Contrapuntal Techniques (3)  
 MUS 434 Form and Analysis (3)  
 MUS 465 Service Playing (2)  
 MUS 466 Organ Pedagogy (1)  
 MUS 467 Organ Literature (3)  
 MUS 496 Senior Recital (1)

Choose eight credits from the following:

MUS 1xx Primary or Secondary Ensemble (8)  
 MUS 219 Piano Accompanying (8)

### **Required for Organ (Electives, 10 credits):**

Choose an additional 10 credits of Music in theory, history, music education, or MIDI:

MUS xxx

### **PERCUSSION, STRINGS, WINDS (41 credits)**

MUS 100 Recital Class (0) (each semester)  
 MUS 1xx Primary Ensemble (8)  
 MUS 1xx Secondary Ensemble (4)  
 MUS 27x Private Lessons (2 - 2 semesters at 1 credit)  
 MUS 27X Private Lessons (6 - 2 semesters at 3 credits)  
 MUS 37X Private Lessons (12 - 4 semesters at 3 credits)  
 MUS 379 Instrumental Pedagogy and Literature (2)  
 MUS 411 Instrumental Musicianship I (3)  
 MUS 434 Form and Analysis (3)  
 MUS 496 Senior Recital (1)

### **Required for Percussion, Strings, Winds Option (Electives, 8 credits):**

Choose an additional 8 credits of Music in theory, history, music education, or MIDI:

MUS xxx MUS xxx MUS xxx

### **Required Minor: None.**

### **General Education 44 credits**

### **MUSIC EDUCATION BS, TEACHING**

#### **Required for Major (Core, 23 credits):**

MUS 125 or 126 Pop Music USA (3)  
 MUS 131, 132 Theory I (8)  
 MUS 162 Piano Proficiency Exam (0)  
 MUS 221, 222 Music Literature and History I and II (6)  
 MUS 231, 232 Theory II (6)  
 Sophomore Review

#### **Required for Major (Professional Education, 30 credits):**

See the SECONDARY EDUCATION section for ad-

mission requirements to Professional Education and a list of required professional education courses.

### **Required for Major (Options):**

Students should choose either Vocal/General Music (K-12) or Instrumental/General Music (K-12) as an area of specialization.

### **VOCAL/GENERAL (36 credits)**

MUS 100 Recital Class (0)  
 MUS 1xx Large Ensemble (7 semesters at 1 credit)  
 MUS 1xx Small Ensemble (4 semesters at 1 credit)  
 MUS 175 Class Instruction in Guitar (1)  
 MUS 341 General Music K-12 (4)  
 MUS 401 Choral Musicianship I (3)  
 MUS 402 Choral Musicianship II (3)  
 MUS 445 Advanced Music Methods (2)  
 MUS 451 Vocal Pedagogy and Literature (3)

Choose a minimum of 4 credits from primary area:

MUS 251, 261 Private Voice I or Private Piano I (4)

Choose a minimum of 3 credits from primary area:

MUS 351, 361 Private Voice II or Private Piano II (4)

Choose a minimum of 2 credits from applied area (If primary area is Voice, 2 credits of 261; if primary area is Piano, 2 credits of 251):

MUS 251 Private Voice I  
 MUS 261 Private Piano I

### **INSTRUMENTAL/GENERAL SPECIALIZATION (37 credits)**

MUS 100 Recital Class (0) (each semester)  
 MUS 151 Class Instruction in Singing I (1)  
 MUS 1xx Large Ensemble (7 semesters at 1 credit)  
 MUS 1xx Small Ensemble (4 semesters at 1 credit)  
 MUS 171 Class Instruction in Brass (2)  
 MUS 172 Class Instruction in Woodwinds (2)  
 MUS 173 Class Instruction in Strings (2)  
 MUS 174 Class Instruction in Percussion (1)  
 MUS 175 Class Instruction in Guitar (1)  
 MUS 27x Private Lessons (4)  
 MUS 341 General Music K-12 (4)  
 MUS 37x Private Lessons (3)  
 MUS 411 Instrumental Musicianship I (3)  
 MUS 412 Instrumental Musicianship II (3)

### **Required Minor: None.**

### **MUSIC MANAGEMENT BS**

#### **Required for Major (Core, 23 credits):**

MUS 125 or 126 Pop Music USA (3)  
 MUS 131, 132 Theory I (8)  
 MUS 162 Piano Proficiency Exam (0)  
 MUS 221, 222 Music Literature and History I and II (6)  
 MUS 231, 232 Theory II (6)  
 Sophomore Review

#### **Required for Major (28 credits):**

MUS 100 Recital Class (0) (each semester)  
 MUS 1xx Primary Ensemble (7)  
 MUS 1xx Secondary Ensemble (4)  
 MUS 2xx Private Lessons (4)



MUS	281	Introduction to MIDI (2)
MUS	450	Music Merchandising (3)
MUS	497	Internship (8-15)*

\*See Music advisor.

**Required for Major (Non-Departmental, 36 credits):**

ACCT	200	Financial Accounting (3)
ACCT	210	Managerial Accounting (3)
BLAW	200	Legal, Political and Regulatory Environment of Business (3)
COMS	101	Introduction to Microcomputers (3)
ECON	201	Principles of Macroeconomics (3)
ECON	202	Principles of Microeconomics (3)
ECON	207	Business Statistics (4)
FINA	362	Business Finance (3)
MGMT	200	Introduction to MIS (3)
MGMT	330	Principles of Management (3)
Choose one course from the following:		
MRKT	310	Principles of Marketing (3)
Business Electives (3)		
Choose one course from the following:		
BED	345	Business Communications (3)
MRKT	415	Retailing Management (3)

**Required for Major (Electives, 3 credits):**

Choose three credits from Music courses in theory, history, music education, or MIDI.

MUS	xxx	Elective (3)
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**Required Minor: None.**

**MUSIC MINOR**

**Required for Minor (21 credits):**

MUS	120	Introduction to Music (3)
MUS	131, 132	Theory I (8)
MUS	1xx	Ensemble (2)
MUS	2xx	Private Lessons (2)
MUS	221, 222	Music Literature and History I and II (6)

**POLICIES/INFORMATION**

**GPA Policy.** Students must pass required courses under either a music major or the music minor with a grade of C or higher.

Students on academic probation must consult with the department chair.

**P/N Grading Policy.** No P/N grades are accepted for required music courses except where course is only offered P/N.

Transfer students who wish to major or minor in music will be evaluated by appropriate music faculty for proper placement in the music curriculum. These students must fulfill all graduation requirements of the Department of Music in both academic and performance areas.

**Residency.** In general, courses taken at another institution at the 300 or 400 level will not be accepted as transfer credit for music majors. **Music majors must earn at least half of their music credits (including two semesters of private study)** at Minnesota State University, Mankato.

Prospective music majors and minors must audition in their major performing area prior to registration.

The Department of Music strongly recommends that students interested in pursuing a major in music contact the department for an advising appointment and audition.

**COURSE DESCRIPTIONS**

**100 (0) Recital Class**

Required for all music majors each semester in residence. May be repeated. P/N only.

**101 (1) Concert Choir**

Select ensemble which performs on and off campus. Pre: Audition Required

**102 (1) Women's Chorale**

Large chorus. Open to all qualified students. Previous singing experience desirable but not required. No audition.

**103 (1) Chamber Singers**

A select group of approximately 20 singers who perform works for small ensemble. The group tours regularly in the state and in the region. Pre: Audition Required

**104 (1) Opera Chorus**

Performs choral repertory drawn from operatic literature. Pre: Audition Required

**105 (1) Maverick Men's Chorus**

The Maverick Men's Chorus is an ensemble dedicated to performing fine music from a wide repertoire available for men's chorus. Open to students as well as members of the university community at large. No audition required.

**111 (1) Wind Ensemble**

A select group of wind and percussion players. Open to all students who play a band instrument. Concerts on and off campus. Pre: Audition Required

**112 (1) Symphonic Band**

Open to all students who play a band instrument. No audition required.

**113 (1) Pep Band**

Open to any qualified student who plays a band instrument. Plays for hockey and basketball games. Pre: Audition Required

**114 (1) Drum Corps**

Open to students who play a band instrument. Pre: audition required. F

**115-01 (1) Jazz Band I**

A select group which studies and performs the literature for contemporary jazz band. Pre: Audition Required

**115-02 (1) Jazz Combo**

This ensemble provides an opportunity for students with limited experience with jazz to explore that repertory. Pre: Audition Required

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## Music

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### 116 (1) University Orchestra

Open to all qualified students who play an orchestral instrument.

Pre: Audition Required

### 117 (1) Theatre Orchestra

Plays for theatre productions.

Pre: Audition Required

### 119-01 (1) Brass Ensemble

Performing with small groups.

Pre: Consent

### 119-02 (1) Woodwind Ensemble

Performing with small groups.

Pre: Consent

### 119-03 (1) String Ensemble

Performing in small groups.

Pre: Consent

### 119-04 (1) Percussion Ensemble

Performing in small groups.

Pre: Consent

### 119-05 (1) Ensemble: Piano

Performing in small groups.

Pre: Consent

### 120 (3) Introduction to Music

A general course in music appreciation. This course includes a study of styles at different periods, musical forms, and information about composers with emphasis on the elements of music and how these elements have evolved through history. (Category 6, General Education; Related Cultural Diversity)

### 125 (3) Pop Music USA: Jazz to Country to Blues to Broadway

Popular music is a multi-billion dollar industry today. What is it, and where did it come from? Learn about the origins of jazz in the music of African-Americans, its growth from Dixieland through the Big Band era (with the contributions of performers like Louis Armstrong and Duke Ellington) to its influences on musical styles in the present day. (Category 6 or 7, General Education; Core Cultural Diversity)--

### 126 (3) Pop Music USA: R & B to MTV

Rock music has fans in every country and in every culture. It really is a "universal" language, but it didn't start that way. It began as black Rhythm and Blue in the 40's, and through to the present, minority groups have had a major influence on the music. (Category 6 or 7, General Education, Core Cultural Diversity)

### 131 (4) Theory I

Diatonic and chromatic vocabulary and relationships by means of work in sight-singing, dictation, harmony, keyboard, and aural analysis. F

### 132 (4) Theory I

Diatonic and chromatic vocabulary, a continuation of 131. Pre: MUS 131 S

### 151 (1) Class Instruction in Singing I

Two semester sequence. Fundamentals of posture, tone production, breathing, diction, and expressiveness. F

### 152 (1) Class Instruction in Singing II

A continuation of 151. S

### 160 (1) Beginning Class Piano

Class instruction in preparation for piano proficiency exam.

### 161 (1) Intermediate Class Piano

Class instruction in preparation for piano proficiency exam.

### 162 (0) Piano Proficiency Exam

Required of all music majors. P/N only.

Pre: Class piano or Piano lessons.

### 171 (1) Class Instruction in Brass

Instrumental music education majors only. Emphasis on pedagogical methods and techniques of individual instruments. May be repeated.

### 172 (1) Class Instruction in Woodwinds

Instrumental music education majors only. Emphasis on pedagogical methods and techniques of individual instruments. May be repeated.

### 173 (1) Class Instruction in Strings

Instrumental music education majors only. Emphasis on pedagogical methods and techniques of individual instruments. May be repeated.

### 174 (1) Class Instruction in Percussion

Instrumental music education majors only. Emphasis on pedagogical methods and techniques of individual instruments.

### 175 (1) Class Instruction in Guitar

Beginning instruction for students with no previous experience in guitar, focus on developing a basic chord vocabulary and accompaniment techniques.

### 219 (1) Piano Accompanying

Experience in accompanying. Advanced pianists may participate in chamber ensembles. May be repeated. Pre: Consent

### 220 (3) History of Jazz

A historical overview of jazz styles and performers.

### 221 (3) Music Literature and History I

An overview of music of the western world from ancient Greece to 1800.

Pre: MUS 132

F

### 222 (3) Music Literature and History II

An overview of music of the western world from 1800 to the present.

Pre: MUS 132

S

### 230 (3) Fundamentals of Music

Required of all students in elementary education curriculum. Notation, basic keyboard skills.

**231 (3) Theory II**

Musical resources of the 18th, 19th, and 20th centuries through lecture, discussion, and performance. Continued work in ear-training, sight-singing, keyboard skills, and analysis.

Pre: MUS 132 F

**232 (3) Theory II**

Musical resources of the 18th, 19th and 20th centuries. A continuation of 231.

Pre: MUS 231 S

**240 (2) Introduction to Music Education**

**251 (1,3) Private Voice I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**261 (1,3) Private Piano I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**262 (1,3) Private Harpsichord I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**265 (1,3) Private Organ I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**271-01 (1,3) Private Trumpet I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**271-02 (1,3) Private French Horn I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**271-03 (1,3) Private Trombone I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**271-04 (1,3) Private Baritone I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**271-05 (1,3) Private Tuba I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**272-01 (1,3) Private Flute I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**272-02 (1,3) Private Oboe I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits

= 1 hour per week.

Pre: Consent

**272-03 (1,3) Private Clarinet I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**272-04 (1,3) Private Saxophone I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**272-05 (1,3) Private Bassoon I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**273-01 (1,3) Private Violin I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**273-02 (1,3) Private Viola I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**273-03 (1,3) Private Cello I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**273-04 (1,3) Private String Bass I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**274 (1,3) Private Percussion I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**275 (1,3) Private Classical Guitar I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**278 (1,3) Private Instrument I**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Consent

**281 (2) Introduction to MIDI**

An introduction to the basics of MIDI (Musical Instrument Digital Interface), the means by which music interacts with computers.

Pre: MUS 131 and 132

**305 (2) Opera Workshop**

Performance of solo and ensemble vocal operatic repertory.

Pre: Consent

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## Music

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**340 (3) Materials and Methods of Teaching Music**

Kindergarten and elementary grades. For elementary education majors only.

Pre: MUS 230

**341 (4) General Music K-12**

Required of all music education majors. Techniques and methods leading to licensure to teach general music in K-12. For music majors only.

**351 (1,3) Private Voice II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**361 (1,3) Private Piano II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**362 (1,3) Private Harpsichord II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**365 (1,3) Private Organ II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**371-01 (1,3) Private Trumpet II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**371-02 (1,3) Private French Horn II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**371-03 (1,3) Private Trombone II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**371-04 (1,3) Private Baritone II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**371-05 (1,3) Private Tuba II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**372-01 (1,3) Private Flute II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**372-02 (1,3) Private Oboe II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**372-03 (1,3) Private Clarinet II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**372-04 (1,3) Private Saxophone II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**372-05 (1,3) Private Bassoon II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**373-01 (1,3) Private Violin II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**373-02 (1,3) Private Viola II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**373-03 (1,3) Private Cello II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**373-04 (1,3) Private String Bass II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**374 (1,3) Private Percussion II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**375 (1,3) Private Classical Guitar II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**378 (1,3) Private Instrument II**

Private lessons: 1 credit = 1/2 hour per week, 3 credits = 1 hour per week.

Pre: Upper Level Jury, and consent

**379 (2) Instrument Pedagogy and Literature**

Topics to be discussed are methods, literature, and teaching techniques for specific wind, percussion, and stringed instruments.

**390 (1-6) Study for Honors**

Instruction for students in honors program.

Pre: Honors Program Status

**396 (0-1) Junior Recital****401 (3) Choral Musicianship I**

Choral conducting and the administration of school choral programs.

**402 (3) Choral Musicianship II**

A continuation of Choral Musicianship I.  
Pre: MUS 401

**411 (3) Instrumental Musicianship I**

Instrumental conducting and the administration of school band and orchestra programs.

**412 (3) Instrumental Musicianship II**

A continuation of Instrumental Musicianship I.  
Pre: MUS 411

**419 (3) Advanced Score Reading and Conducting**

Conducting and score reading skills for the advanced instrumental conductor.

**422 (3) Music of the Renaissance**

An intensive examination of the music of Western Civilization from 1450-1600.  
Pre: MUS 221

**423 (3) Music of the Baroque Era**

An intensive investigation of the music written from 1600-1750.  
Pre: MUS 221

**424 (3) Music of the Classic Period**

Music of the age of Haydn, Mozart, and Beethoven.  
Pre: MUS 222

**425 (3) Music of the 19th Century**

An intensive study of Romanticism in music.  
Pre: MUS 222

**426 (3) Music of the Modern Era**

Music since 1900.  
Pre: MUS 222

**427 (3) Music Theatre**

Methods of presenting musical drama.

**429 (3) Topics in Ethnomusicology**

The music of non-Western cultures.

**431 (1-3) Composition**

An independent study in compositional techniques.  
Pre: Consent

**432 (3) Contemporary Theory**

Twentieth-century harmonic, melody, and contrapuntal practices.  
Pre: MUS 232

**433 (3) Contrapuntal Techniques**

Writing and analyzing 2-part, 3-part, and 4-part counterpoint.  
Pre: MUS 232

**434 (3) Form and Analysis**

Significant musical forms, past and present.  
Pre: MUS 232

**435 (3) Arranging and Orchestration**

Writing techniques for instrumental groups of various types.  
Pre: MUS 411

**441 (2) Music in Early Childhood**

Learning characteristics, teaching strategies, and materials for ages 2-6.

**442 (2) Music for Special Education**

Music in the education of the special learner.

**445 (2) Advanced Music Methods**

Classroom techniques for vocal/general K-12 licensure.

**450 (3) Music Merchandising**

A survey of career opportunities in the music business.

**451 (3) Vocal Pedagogy and Literature**

Principles of applied voice instruction and an overview of vocal literature.

**455 (2) Diction for Singers**

Application of the International Phonetic Alphabet to song texts in English, French, Italian, and German.

**459 (2) The Art Song**

Accompanied solo vocal repertory, with special emphasis on the 19th and 20th centuries.

**461 (1) Piano Pedagogy**

Technical problems in relationship to different styles.

**462 (3) Piano Literature**

A survey of literature for the keyboard from the early baroque to the present.

**465 (2) Service Playing**

For organists: playing hymns, improvising, conducting from the console, and arranging piano accompaniments for organ.

**466 (1) Organ Pedagogy**

Pedagogy and methods for organ.

**467 (3) Organ Literature**

Literature from the 15th century to the present day.

**479 (2) Instrument Repair and Maintenance**

Basic techniques.

**481 (2) Advanced MIDI Production**

In-depth aspects of MIDI production.

**485 (1-4) Selected Topics**

**491-01 (1) IS: Lake Washington Band Camp**

Participation in Junior or Senior High Band Camp at Camp Patterson.

**494 (1-4) Workshop**

**496 (1) Senior Recital**

Required of Bachelor of Music majors.

**497 (1-16) Internship**

**499 (1-4) Independent Study**



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## Nonprofit Leadership

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### Nonprofit Leadership

#### Pending MnSCU approval

*College of Social and Behavioral Science*  
106 Morris Hall • 507-389-1714  
Program Coordinator:  
Bill Bernhagen (URBS) • 507-389-6836  
Department Chair, Sociology:  
Bill Wagner • 507-389-5602

The undergraduate **nonprofit leadership certificate** is a cooperative educational program between the College of Social and Behavioral Science and the College of Allied Health and Nursing. Within these two colleges five departments have a leadership role: Political Science and Law Enforcement; Recreation, Parks and Leisure Services; Sociology and Corrections; Social Work; and the Urban and Regional Studies Institute.

This 18-credit certificate is specifically designed to respond to the employment needs and opportunities within one of the fastest growing sectors of the United States economy. The nonprofit leadership certificate is a multidisciplinary program for undergraduate students and nonprofit practitioners interested in gaining knowledge and skills for success and advancement in nonprofit leadership. The certificate is designed to address the following entry-level nonprofit competencies:

- Communication skills;
- Computer/technology literacy skills;
- Historical and philosophical foundations in nonprofit leadership;
- Nonprofit marketing;
- Public policy;
- Fundraising principles and practices;
- human resource development and nonprofit management; and
- Program Planning

These competencies are achieved through the following program requirements.

#### Required Courses

NPL 273 Introduction to Nonprofit Leadership (3)

#### Program Planning and Evaluation (choose one)

RPLS 376 Program Planning (3)  
URBS 302 Urban Program Evaluation (3)  
POL 321 Public Policy Analysis and Evaluation (3)  
SOWK 469 Applied Social Research (3)  
SOC 466 Program Planning (3)

#### General Nonprofit Management (choose one)

RPLS 473 Administration of Leisure Time Program (3)  
URBS 230 Community Leadership and Service (3)  
SOC 417 Program Administration (3)

#### Fundraising Principle and Practices (choose one)

URBS 499 Grants and Administration  
RPLS 465 Event Management

#### Required Course (Capstone)

NPL 473 Advanced Workshop in Nonprofit Leadership

#### Internship (choose one)

POL 491 Internship (3)  
RPLS 497 Internship (3)  
SOC 497 Internship (3)  
SOWK 497 Internship (3)  
URBS 497 Internship (3)

#### Internship Experience

The student desiring a certificate is required to successfully complete a three (3) credit internship in a qualifying 501(c)(3) not-for-profit organization. The internship will be administered with one of the four sponsoring departments.

#### Nonprofit Leadership Workshop (NPL 273 and NPL 473)

The workshop spans two semesters and will address the competencies of: historical and philosophical foundations in nonprofit leadership; board and committee development; nonprofit marketing; and public policy. The workshop also provides the student with a capstone-type experience. This is a professional development workshop that serves as a forum for exchange between students, faculty and professional agency personnel.

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## Nursing

*College of Allied Health & Nursing*

*School of Nursing*

360 Wissink Hall • 507-389-6022

Web site: [www.mnsu.edu/dept/nursing/welcome.html](http://www.mnsu.edu/dept/nursing/welcome.html)

Interim Associate Dean: Carol E. Larson

Sharon Aadalen, Dee Anderson, Marilyn Banker, Annette Benson, Mary Bliesmer, Kathleen Brandenburg, Carol Brown, Patricia Earle, Sandra Eggenberger, Julie Hebenstreit, Carol Heupel, Marilyn Kosmala, Norma Krumwiede, Susan Lampe, June McLachlan, Nancy McLoone, Sonja Meiers, Dianne Overend, Candice Pence, Linda Rosenbaum, Kathleen Rowe, Dottie Salsbury, Kathleen Sheran, Regina Smith, Marcia Stevens, Mary Walter, Linda Wenkel, Karen Willette-Murphy, Diane Witt, Patricia Young

The nursing curriculum is designed to provide opportunities for the student to develop a sound theoretical and clinical foundation for the practice of professional nursing. The graduate is prepared for a variety of roles in the community, including the responsibility for health promotion; prevention of disease; and caring for the sick in the community, the hospital and the home. An understanding of people and how they adapt to the environment is essential to the provision of these health-care services.

The program is approved by the Minnesota Board of Nursing and accredited by the National League for Nursing Accrediting Commission (NLNAC).

Inquiries regarding accreditation may be made by contacting:

NLNAC  
61 Broadway  
New York, NY 10006  
212-363-5555

Graduates of the program are eligible to take the National Council Licensure Examination—Registered Nurse. Successfully passing this exam permits the graduate to practice as a registered nurse (R.N.). Graduates will have met the requirements for certification as public health nurses and licensure as school nurses in Minnesota.

**Admission to Major.** Application for admission to the School of Nursing is a separate process in addition to being admitted to the University. Requirements for admission to the nursing major are 1) completion of at least 30 semester credits, 2) a minimum career grade point average of 2.5 on a 4.0 scale, 3) minimum grade of C in all required prerequisite and support courses. See list below. All prerequisite and support courses must be taken for a letter grade; P/N is not acceptable. Admission is competitive. Achievement at the 2.5 level and completion of all prerequisite credits does not guarantee admission to major. The Undergraduate Program Committee reviews applications from all students and considers cumulative GPA and prerequisite GPA (grade point average for selected prerequisite courses) as factors to determine ranking for admission. Screening criteria are reviewed annually and are available upon application. 4) RN option students must have practiced full-time for at least one year in the last five years. There are two application deadline dates each academic year: the third Friday of fall semester classes and the fifth Tuesday of spring semester classes. RN option students are admitted once per year to begin spring semester. Deadline date for application is October 15. Students should contact the School of Nursing for specific dates. The application form may be obtained from the Web site or Student Relations Coordinator or the RN Option Coordinator or the School of Nursing office. The number of students that may be admitted to the nursing major is limited. Applicants are accepted primarily on the basis of their academic achievement in prerequisite courses as listed in "Facts in Brief" which is available in the School of Nursing or the Web site.

For the Nursing major, students must meet computer science competency. This can be met by completing NURS 110 or by passing a competency exam.

## NURSING BS

### Required General Education (23 credits)

ENG	101	Composition (4)#
CHEM	111	Chemistry of Life Processes (5)^
BIOL	270	Microbiology (4)^
EDFN	235	Human Development (3)~
PSYC	101	Psychology (4)#
SOC	101	Introduction to Sociology (3)#

### Recommended for Category 4 (3 or 4 credits)

MATH	112	College Algebra (4)~ or
STAT	154	Elementary Statistics (3)~

### Required Support Courses (15 credits):

BIOL	220	Human Anatomy (4)#
BIOL	230	Human Physiology (4)^
FCS	240	Nutrition I (3)~
PSYCH	455	Abnormal Psychology (4)+

### # Prerequisites

^ Two of these three courses must be successfully completed prior to submitting an application to the School of Nursing. The third course must be successfully completed prior to enrolling in nursing courses

~ Must be successfully completed prior to enrolling in nursing courses

+ Must be successfully completed prior to NURS 440

### Required for Major (63 credits):

Students may access 1 of the following 2 options depending on previous education and credentials.

#### BASIC OPTION (63 credits):

NURS	110	Nursing Perspectives (1)
NURS	220	Foundations in Nursing Science (4)
NURS	252	Altered Human Functioning (3)
NURS	253	Psychomotor Strategies in Nursing I (4)
NURS	260	Pharmacology for Nursing Practice (2)
NURS	340	Gerontological Nursing (2)
NURS	341	Gerontological Clinical (3)
NURS	350	Altered Physiologic Mode Nursing I (3)
NURS	351	Altered Physiologic Mode Clinical I (3)
NURS	353	Psychomotor Strategies in Nursing II (1)
NURS	360	Childbearing Family Nursing (2)
NURS	361	Childbearing Family Clinical (3)
NURS	380	Child Health Nursing (2)
NURS	381	Child Health Clinical (3)
NURS	410	Nursing Perspectives of Leadership and Management (2)
NURS	430	Nursing Research (2)
NURS	440	Mental Health Nursing (2)
NURS	441	Mental Health Clinical (3)
NURS	450	Altered Physiologic Mode Nursing II (3)
NURS	451	Altered Physiologic Mode Clinical II (4)
NURS	460	Community Health Nursing (2)
NURS	461	Community Health Clinical (4)
NURS	470	Nursing Synthesis Seminar (1)
NURS	471	Nursing Synthesis Clinical (4)

#### RN OPTION (63 credits)

### Transfer Credits

In accordance with the statewide MN Articulation Agreement, 30 semester nursing credits are transferred for RN's. An additional 31 credits must be earned through a four-year college.

### Required (MSU Courses, 33 credits):

NURS	298	Professional Nursing for RN Students (4)^
NURS	302	Nursing Domains-RN's (3)^
NURS	303	Nursing Domains Clinical-RN's (2)
NURS	402	Psychosocial Nursing-RN's (3)^
NURS	410	Nursing Perspectives of Leadership and Management (2)^
NURS	430	Nursing Research (2)^
NURS	460	Community Health Nursing (2)^

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## Nursing

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NURS 461 Community Health Clinical (4)  
NURS 470 Nursing Synthesis Seminar (1)^  
NURS 471 Nursing Synthesis Clinical (4)  
Choose 6 credits of electives from the following:  
NURS 252 NURS 260 NURS 340  
NURS 360 NURS 380 NURS 428>  
NURS 440 NURS 450 NURS 451  
NURS 452

^ Web-based course with supplemental on-campus classes.

> On-line or workshop format

RN transfer students must complete a college chemistry course prior to admission. Prior to enrollment in 400-level courses, PSYCH 455 must be successfully completed.

### LPN OPTION

The LPN option is available only with a sufficient number of applications. Please call the School of Nursing for specific information.

**Required Minor: None.**

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### POLICIES/INFORMATION

**GPA Policy.** A grade of C or better must be achieved in all prerequisite and support courses. Nursing courses are sequentially arranged and progression is based on successful completion of the prerequisite nursing course(s). All classroom courses are offered for grade only and all clinical courses are offered for P/N only. To continue in the nursing major, all students must achieve and maintain at least a C or P grade in each required nursing course. A grade of D, F, or NC in a nursing course is unacceptable, and the student must repeat the course to continue in the nursing major. In addition, it is required that each student maintain at least a C (2.0) average in all courses completed.

**P/N Grading Policy.** All of the pre-nursing and foundational courses EXCEPT NURS 110 must be taken for a letter grade; P/N is not acceptable. A grade of C must be achieved. (A grade of P must be earned in NURS 110)

The School of Nursing utilizes a variety of health-care agencies for students' clinical experiences. All clinical experiences are planned and conducted by the School of Nursing faculty. The student is responsible for travel to clinical agencies and for housing arrangements when necessary. Criminal background studies must be completed each year prior to beginning clinical courses.

**Transfer Students.** It is often possible for students to complete the required pre-nursing curriculum at another college or university and then have these courses and credits transferred to MSU. Basic option RN courses begin fall semesters. Nursing courses begin both fall and spring semesters.

**Standardized Exams.** All students enrolled in the School of Nursing will be required to take standardized achievement examinations at periodic intervals during their program. Exam results are used for student self-evaluation as well as program evaluation of learning outcomes.

**Health.** All nursing students are required to maintain a program of yearly health examinations and immunizations. Students will be advised of these requirements and must assume responsibility for meeting the health requirement before starting clinical experiences each year, beginning with the sophomore year.

**Expenses.** Each student is responsible for costs related to travel for nursing course experiences, student uniforms, health examinations, immunizations, and Mantoux; health insurance, malpractice insurance coverage, and CPR certification. In the case of accidental exposure, students are responsible for testing and follow-up care costs.

**Continuing Education Program.** Continuing education workshops, designed in response to the needs defined by area nurses, are available to registered nurses and licensed practical nurses seeking to maintain their competence in nursing practice. Continuing Education Units (CEUs) are awarded upon successful completion of workshops. The CEU is not applicable toward meeting the requirements for a degree at Minnesota State University, Mankato. Requests for further information should be directed to Director, Continuing Education Program, College of Allied Health and Nursing.

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### COURSE DESCRIPTIONS

#### 101 (3) Courage, Caring and Team Building

This experiential course will prepare students for effective participation in a variety of groups. Students can expect to experience various group member roles through structured activities within the MSU culture and with diverse cultures. Students will learn about risk taking, trust building, cooperation/collaboration in groups and caring for self and others in the larger community. V

#### 110 (1) Nursing Perspectives

Introduction to nursing as a profession and career, exploration of nursing practice concepts and overview of the nursing curriculum and conceptual framework. F, S

#### 220 (2,4) Foundations in Nursing Science

Introduction to the Roy Adaptation Model as a framework for critical thinking, nursing process and practice. Development of effective individual and group communication skills; application of communication theory in small groups. Use of the interview process to collect data from individuals and families. Beginning socialization to nursing as a profession.

Pre: Admission to the School of Nursing F, S

#### 252 (3) Altered Human Functioning

A holistic perspective of the pathophysiologic functioning of the human adaptive system. Includes alterations in oxygenation, nutrition, elimination, activity and rest, and protection. Also includes alterations in processes related to the senses, fluid and electrolytes and neurological and endocrine functions.

Pre: Admission to the School of Nursing F, S

**253 (4) Psychomotor Strategies in Nursing I**

The first of two psychomotor skills courses in which the Nursing Learning Resource Center is utilized for self-directed learning activities and evaluation of performance with clinical application experience. The psychomotor skills are beginning to intermediate concepts, principles and techniques utilized with patients in a variety of clinical settings.

Pre: Admission to the School of Nursing F, S

**260 (2) Pharmacology for Nursing Practice**

Introduction to pharmacologic concepts with emphasis on nursing responsibilities in drug therapy.

Pre: Admission to the School of Nursing F, S

**298 (4) Professional Nursing for RN Students**

Introduction to professional nursing with emphasis on: adaptation and the nursing process; socialization to the profession; self-awareness; and interactive skills for nursing practice

Pre: Current RN License F

**302 (3) Nursing Domains-RN's**

Concepts related to the practice of professional nursing in the four domains comprising the health system: trauma/acute illness;) chronic disease management; health promotion/maintenance/education; and supportive care management.

Pre: Admission to RN Option and NURS 298 S

**303 (2) Nursing Domains Clinical-RN's**

Clinical application of nursing care for individual and family clients in the domains of health promotion/maintenance/education, trauma/acute illness, and chronic disease management with emphasis on the physiologic mode.

Pre: Admission to RN Option and NURS 298 and Pre or Coreq: NURS 302 S

**340 (2) Gerontological Nursing**

Theory course on the promotion of physiological and psychosocial adaptation of the older adult client.

Pre: NURS 220, 252, 253, and 260 F, S

**341 (3) Gerontological Clinical**

Gerontological clinical nursing practice in various health care settings.

Pre: NURS 220, 252, 253 and 260, Pre or Coreq: NURS 340 and 353 F, S

**350 (3) Altered Physiologic Mode Nursing I**

The first of two theory courses. Emphasizes the promotion of adaptation in individuals experiencing alterations in activity and rest patterns, ingestion, digestion, absorption and elimination, protection, endocrine function, inflammatory-immune-infectious response, and neoplastic responses. Concepts of stress and coping, powerlessness, sick role and long term illness are introduced.

Pre: NURS 220, 252, 253, and 260; Pre or Coreq: NURS 340 F, S

**351 (3) Altered Physiologic Mode Clinical I**

The first of two clinical courses emphasizing the nursing care of adult clients experiencing physiologic and psychosocial alterations. The Roy Adaptation Model

will be utilized to provide nursing care for clients requiring supportive, acute and chronic care in simple to intermediate situations.

Pre: NURS 220, 252, 253, 260 and 341, Pre or Coreq: NURS 350 F, S

**353 (1) Psychomotor Strategies in Nursing II**

The second of two psychomotor skills courses in which the Nursing Learning Resource Center is utilized for self-directed learning activities and evaluation of performance.

The psychomotor skills included in this course relate to the more advanced concepts, principles and techniques utilized with patients in a variety of clinical settings.

Pre: NURS 220, 252, 253, and 260 F, S

**360 (2) Childbearing Family Nursing**

A course designed to describe the physiological and psychosocial changes that occur in families during the childbearing period. Key concepts include personal and family adaptation and health promotion.

Pre: NURS 340, 341, 350, 351, and 353 F, S

**361 (3) Childbearing Family Clinical**

This clinical course focuses on the care of the childbearing family. The nursing process is utilized to plan and implement care of normal and high risk perinatal clients in the hospital and community based settings.

Pre: NURS 340, 341, 350, 351, and 353, Pre or Coreq: NURS 360 F, S

**380 (2) Child Health Nursing**

Concepts related to adaptation, growth and development, and specific physiologic and psychosocial alterations of the child from infancy through adolescence.

Pre: NURS 340, 341, 350, 351, and 353 F, S

**381 (3) Child Health Clinical**

A clinical course utilizing the nursing process to plan and implement nursing care for children from infancy through adolescence with a variety of specific physiologic and psychosocial responses. Clinical experiences with children and their families occur in acute care and community based settings.

Pre: NURS 340, 341, 350, 351 and 353, Pre or Coreq: NURS 380 F, S

**402 (3) Psychosocial Nursing-RN's**

A combination theory and clinical course. Emphasis on family, culture, ethical values, and community as they relate to psychosocial problems throughout the lifespan. Application of nursing care for individual and family clients in the domains of health promotion/maintenance/education and supportive care management with emphasis on the psychosocial modes.

Pre: NURS 302 and 303; PSYC 455 F

**410 (2) Nursing Perspectives of Leadership and Management**

Current theories derived from research in organizational psychology, business, and educational leadership are explored as they apply to the role of nurse leader and/or manager of nursing personnel giving direct care. Patient care, human resource and operational management

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## Nursing

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skills in interaction with a changing health care environment are emphasized.

Pre: NURS 430, 440, 441, 460 and 461 or Consent  
F, S

### 428 (2) Nursing Elective

Several sections on various topics not included in the required curriculum. Each section is a different course and expands on the nursing major courses. Examples of topics are ethical dimensions, laughter and wellness in nursing practice, dementia, rural nursing, cancer care, etc.

Pre: As appropriate for each section V

### 430 (2) Nursing Research

Introduces the components of the research process: problem and hypothesis development, literature review, design, sampling, data analysis and dissemination of results. The student is guided to critique and be an informed consumer of nursing research. A researchable nursing related problem is identified and a scholarly paper written.

Pre: All 300 level nursing courses or admission to RN Track or Consent F, S

### 440 (2) Mental Health Nursing

Issues of self-esteem, dependency, abuse, and violence are addressed related to inpatient and community based nursing care of individuals, groups, families, and organizational systems.

Pre: All 300 level nursing courses and PSYC 455 or Consent F, S

### 441 (3) Mental Health Clinical

The focus of this clinical course is on patterns of ineffective behavioral responses related to conditions of mental illness. Mental health concepts and process skills are applied to working with individuals, groups, families, and members of the health team.

Pre: All 300 level nursing courses or Consent, Pre or Coreq: NURS 440 F, S

### 450 (3) Altered Physiologic Mode Nursing II

The second of two theory courses. Emphasizes the promotion of adaptation in individuals experiencing alterations in fluid and electrolytes/burns, oxygenation, renal elimination, perception, and multiple trauma. Concepts of crisis theory are introduced. Psychosocial needs of both clients and families are integrated throughout the course

Pre: NURS 430, 440, 441, 460 and 461 F, S

### 451 (4) Altered Physiologic Mode Clinical II

The second of two clinical courses emphasizing the nursing care of adult clients experiencing physiologic and psychosocial alterations. The Roy Adaptation Model will be utilized to provide and coordinate nursing care of clients requiring acute and chronic care in complex situations.

Pre: NURS 430, 440, 441, 460 and 461, Pre or Coreq: NURS 450 F, S

### 452 (3) Advanced Health Assessment

This course offers theoretical and simulated clinical practice to develop advanced skills in health and physical assessment throughout the life span. Students complete a client data base and identify nursing problems necessary

in making clinical judgments and planning and caring for the health care needs of individual clients.

Pre: Permission of instructor. Priority to graduate students and RN's. V

### 460 (2) Community Health Nursing

This course focuses on the community and integrates the principles of nursing and public health. Nursing care of individuals, families and groups is addressed within the context of promoting, maintaining, and restoring health.

Pre: All 300 level nursing courses or Consent, Pre or Coreq: NURS 440 or Admission to RN Track F, S

### 461 (4) Community Health Clinical

The focus of this clinical course is on community based nursing and home health care. Public health concepts are applied to promote adaptation in individuals, families, and populations.

Pre: All 300 level nursing courses or Con, Pre or Coreq: NURS 440 and 460 or NURS 402 and 460 F, S

### 470 (1) Nursing Synthesis Seminar

This course focuses on the transition of the student into the role of the professional nurse. Licensure and implications for accountability will be addressed.

Pre: NURS 410, 450, and 451 F, S

### 471 (4) Nursing Synthesis Clinical

The purpose of this capstone clinical course is to expand the student's knowledge and skill in caring for individuals, families and/or communities and to gain reality-based insights into the role of the professional nurse.

Pre: NURS 410, 450, and 451, Coreq: NURS 470 F, S

### 490 (1-3) Workshop

Workshop(s) with various topics and titles. V

### 491 (1-5) In-Service

Workshop(s) with various topics and titles. V

### 499 (1-5) Individual Study

Individual study according to outcomes developed by faculty and student(s). V

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## Open Studies, BS

*College of Arts & Humanities*

*Open Studies Program*

131 Nelson Hall • 507-389-5522

Director: Marshel D. Rossow

The Open Studies baccalaureate major is designed to give highly motivated, self-directed students an opportunity to create their own programs and earn an undergraduate degree. It is a liberal education program designed for students who wish to major in an interdisciplinary area with a coherency of design.

**Admission to Major.** Admission will be granted to students who meet eligibility requirements and who complete a formal application to the Open Studies program. Eligibility requirements are as follows:

- Student must have a current, cumulative GPA



## Philosophy

of 2.8 or higher, according to MSU records.

- Student should apply after earning a minimum of 32 semester credits and before completing 80 semester credits, according to MSU records. Students having more than 80 credits may still be considered for the Open Studies program if they are willing to meet all other requirements of the program.
- Student must submit a formal application on a form provided by the Open Studies director.

### POLICIES/INFORMATION

**Areas of Concentration.** Students seeking the Open Studies degree will select three academic areas in which to concentrate their work and will arrange for a faculty advisor in each of those areas to oversee their work in each area. The areas of study must represent three distinct academic disciplines at Minnesota State University. The student must file a plan of study that provides a reason for choosing these areas of study and that demonstrates why the proposed work cannot be accomplished under the usual major-and-minor(s) format at MSU.

**Continuation in Program.** The following rules explain the requirements for a student to continue in the Open Studies program and to receive a university degree. The Open Studies major must:

- Maintain a minimum cumulative GPA of 2.80.
- Apply grades of A, B and C to the three areas unless specific courses are offered only on a P/NC basis.
- Complete the university's general-education program.
- Complete at least 64 upper-division semester credits.
- Complete a minimum of 15 semester credits of study in each of the three selected academic areas of concentration. A faculty advisor in each area must be willing to serve on a committee with the Open Studies director to oversee the student's work.
- Complete a capstone project synthesizing the areas of concentration. The completed project must be acceptable to members of the student's committee.

### COURSE DESCRIPTION

#### 499 (3) Capstone Experience

In the final year of the Open Studies degree, each major will undertake a project synthesizing the three areas of concentration. The project may range from primary research to practicum-type experience, but it will involve a written report and must receive approval from the Open Studies director and from the advisor in each area of concentration at the project's inception and completion.

Pre: Consent of director.

## Philosophy

*College of Arts & Humanities*

*Department of Philosophy*

227 Armstrong Hall • 507-389-2012

Chair: Richard Liebendorfer

Cathryn Bailey, John Humphrey, Hal Walberg

Like no other discipline, through its methodical scrutiny of the entire network of our beliefs, philosophy reveals and clarifies our fundamental ideas and principles. Recognizing that anyone who systematically searches for knowledge may be considered a philosopher, the highest degree in the sciences and humanities which the modern university grants is the Ph.D. - the doctor of philosophy.

Because it engages in a comprehensive analysis of the theoretical foundations of other disciplines, philosophy serves as an excellent pre-professional major. The study of philosophy provides the student with a wealth of analytical skills, making it one of the preferred pre-law and pre-med majors. The insights and perspectives of philosophy prepare leaders of industry, politicians, theologians, and comedians alike. Through philosophy, the continued conversation that constitutes our culture is kept alive.

Minnesota State University's philosophy program provides general education courses, electives, and minors supporting concentrations in other fields. A philosophy major is both for those who want to become professional philosophers and those who want a general liberal education. It traverses other disciplines, providing the ability to deal with such problems as the nature of values and knowledge, and studies the development of ideas and their impact on the arts, religion, and social institutions.

**Admission to Major** is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

### PHILOSOPHY BA, BS

#### Required for Major (Core, 12 credits):

PHIL	110	Logic and Critical Thinking (3) or
PHIL	311	Symbolic Logic (3)
PHIL	334	History of Philosophy: Ancient (3)
PHIL	336	History of Philosophy: Modern (3)
PHIL	495	Senior Thesis (2)
PHIL	496	Senior Thesis (1)

**Note:** All majors must submit, prior to graduation, a portfolio of three papers, one paper from a history of philosophy class, one from a 400 level class, and one of the student's choosing.

Choose one of the following courses (History):

PHIL	335	History of Philosophy: Medieval (3)
PHIL	337	19th Century Philosophy (3)
PHIL	338	American Philosophy (3)
PHIL	358	Eastern Philosophy (3)
PHIL	437	Contemporary Philosophy (3)

Choose one of the following courses (Values):

PHIL	120	PHIL	205	PHIL	222
PHIL	224	PHIL	226	PHIL	321
PHIL	460				

#### Required Electives (18 credits):

Choose a minimum of 15 at 300 and/or 400 level.

# Philosophy

PHIL 100	PHIL 110	PHIL 112
PHIL 115	PHIL 120	PHIL 205
PHIL 222	PHIL 224	PHIL 226
PHIL 311	PHIL 321	PHIL 334
PHIL 335	PHIL 336	PHIL 337
PHIL 338	PHIL 358	PHIL 361
PHIL 410	PHIL 437	PHIL 450
PHIL 455	PHIL 460	PHIL 473
PHIL 474	PHIL 480	PHIL 490
PHIL 491	PHIL 499	

**Required for Bachelor of Arts (BA) degree ONLY:**  
Language (8)

**Required Minor: Yes. Any.**

## PHILOSOPHY MINOR

**Required for Minor (Core, 9 credits):**

PHIL 334	History of Philosophy: Ancient (3)
PHIL 336	History of Philosophy: Modern (3)

Choose one course from the following:

PHIL 335	History of Philosophy: Medieval (3)
PHIL 337	19th Century Philosophy (3)
PHIL 338	American Philosophy (3)
PHIL 358	Eastern Philosophy (3)
PHIL 437	Contemporary Philosophy (3)

**Required Electives (9 credits):**

Choose a minimum of 9 additional Philosophy credits from the following:

PHIL 100	PHIL 110	PHIL 112
PHIL 115	PHIL 120	PHIL 205
PHIL 222	PHIL 224	PHIL 226
PHIL 311	PHIL 321	PHIL 334
PHIL 335	PHIL 336	PHIL 337
PHIL 338	PHIL 358	PHIL 361
PHIL 410	PHIL 437	PHIL 450
PHIL 455	PHIL 460	PHIL 473
PHIL 474	PHIL 480	PHIL 490
PHIL 491	PHIL 499	

## POLICIES/INFORMATION

**GPA Policy.** None.

**P/N Grading Policy.** The P/N grading system applies to all courses, but majors and minors may take 300- or 400-level courses in philosophy for P/N credit only with the consent of the department.

## COURSE DESCRIPTIONS

### 100 (3) Introduction to Philosophy

Introduction to the nature of philosophy and specific, basic problems. F, S

### 110 (3) Logic and Critical Thinking

Traditional syllogistic logic and an introduction to the elements of modern symbolic logic. F, S

### 112 (3) Logic of Scientific Method

Inductive logic, formation of hypotheses, scientific explanation, definition, classification, probability, analogy. V

### 115 (3) Race, Class and Gender

To what extent do the differences among races and between genders represent biological differences, and to what extent are they constructed by society? Is racism best conceptualized as an additional burden to sexism or as one different in kind? V

### 120 (3) Introduction to Ethics

Discussion of theories of value and obligation. V

### 205 (3) Culture, Identity and Diversity

Discussion of the ways that a culture both creates human community and shapes self-identity. Exploration of similarities and differences between and interdependence among cultural traditions, and of vocabularies for assessing traditions. V

### 222 (3) Medical Ethics

Ethical perspectives relevant to issues such as euthanasia, genetic engineering, organ transplant, patients' rights, abortion, etc. V

### 224 (3) Business Ethics

Introduction to ethical theories and concepts and their application to specific cases in the world of business. V

### 226 (3) Environmental Ethics

Questions about human responsibilities to other animals and the environment gain urgency as environmental crises become more prevalent, and animal species continue to be eliminated. Learn about, critique, and apply the principles underlying evaluations of human environmental conduct. V

### 311 (3) Symbolic Logic

Study of the elements of first order symbolic logic, i.e., the propositional calculus and the predicate calculus, and its applications to ordinary language and mathematics. S

### 321 (3) Social and Political Philosophy

Human rights and responsibilities in relation to the organization of society and government. V

### 334 (3) History of Philosophy: Ancient

Philosophers of ancient Greece and Rome. F

### 335 (3) History of Philosophy: Medieval

Philosophers of the Middle Ages. V

### 336 (3) History of Philosophy: Modern

Renaissance through the 18th century. S

### 337 (3) 19th Century Philosophy

Philosophers and philosophies of the 19th century. V

### 338 (3) American Philosophy

Colonial times to the present. V

### 358 (3) Eastern Philosophy

Survey of principle philosophical doctrines of ancient Chinese philosophers and a survey of Indian philosophical speculation. V

**361 (3) Philosophy of Religion**

Structure and logic of religious belief. Problems such as the existence of God, evil, immortality, miracles, and religious language. F

**410 (3) Philosophy of Language**

Theories of meaning, speech acts and semantics, relation of language to the world. V

**437 (3) Contemporary Philosophy**

Major philosophers and philosophies of the late 20th Century. V

**450 (3) Special Topics**

Intensive study of a single philosopher or topic. V

**455 (3) Existentialism and Phenomenology**

In-depth analysis of major European existentialists such as Kierkegaard, Heidegger, and Sartre. V

**460 (3) Philosophy of the Arts**

Aesthetic principles, theories, and the creative process. Theories of visual arts, music, literature, dance, etc. S

**473 (3) Knowledge and Reality**

Analysis of the status and justification of claims about the nature and limits of human knowledge and the nature of what may be held to be real. V

**474 (3) Philosophy of the Mind**

The nature of consciousness, mind and body relations, freedom of action. V

**480 (3) Philosophy of Science**

Nature of explanations, causality, theoretical entities, and selected problems. V

**490 (1-6) Workshop**

Special event of less than semester duration. V

**491 (1-6) In-Service**

V

**495 Senior Thesis (2)**

The nature of the topic of the senior thesis is jointly determined by the student and Philosophy Department faculty members. Philosophy majors should enroll in this course in the first semester of their final year of undergraduate studies. By the end of the first semester of the final year, the student will have completed a substantive draft of their senior thesis. The thesis will be completed during the final semester of the student's undergraduate studies.

**496 Senior Thesis (1)**

The senior thesis begun in Philosophy 495 will be completed.

A core goal of the philosophy major is that students be able to engage in sustained development and analysis of an important philosophical topic. The senior thesis serves as a culminating exercise in a student's undergraduate career that hones those skills central to the subject of philosophy. The senior thesis will also serve as a tool for assessing the major.

**499 (1-6) Individual Study**

Individual study of a philosopher or problem. V

**Physical Education**

*College of Allied Health & Nursing*

*Department of Human Performance*

1400 Highland Center • 507-389-6313

Web site: [www.mnsu.edu/dept/colahn/HPhp.html](http://www.mnsu.edu/dept/colahn/HPhp.html)

Chair: Harry Krampf

Rayla Allison, Jennifer Behrens, Dean Bowyer, Marge Burkett, Greg Clough, Ken Ecker, Sherry Folsom-Meek, Patricia Hale, Clarence Holley, Kent Kalm, Julie Kerr-Berry, Jim Makovsky, Matt Margenthaler, Lori Meyer, Christine Miskec, Jerry Olszewski, Phillip Rhoades, Christina Ruff, Debra Runkle, Gary Rushing, Mike Schott, Pat Sexton, Doug Tully, Suzanne Venet, Mary Visser, Ann Walker, Joe Walsh, Robert Weber.

Physical education develops and maintains individuals for vocational and personal pursuits through physical activities. Students are taught conditioning activities and recreational skills for this purpose and for desirable mental attitudes and social behavior for university and post-university life. The professional programs listed are designed to prepare students for leadership in human performance/physical education and related fields.

**Admission to Major** is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

Students are encouraged to consult with appropriate advisors for additional departmental requirements.

Students planning to major in the College of Allied Health and Nursing have an advisor from their area of interest assigned to them. Questions and concerns pertaining to advising and the assignment of advisors can be answered by Mark Schuck, student relations coordinator, 162 Highland Center, 507-389-5486.

**PHYSICAL EDUCATION BS (Non-Teaching)****Required for Major (Performance Core, 4 credits):**

Choose 4 credits from the following courses:

HP 166 Team Games Skills I (1)

HP 174 Individual Dual Activities (1)

HP 175 Fitness Activities (1)

HP 176 Lifetime Activities I (1)

HP 177 Lifetime Activities II (1)

HP 178 Social, Folk and Square Dance Technique (1)

HP 182 Aquatic Skills (1)

**Required for Major (Theory Core, 20 credits):**

HP 160 Introduction to Human Performance Studies (2)

HP 290 Psycho-Social Aspects of Sport (3)

HP 320 Foundations of Motor Learning (3)

HP 348 Structural Kinesiology and Biomechanics (3)

HP 403 Measure and Evaluation in Human Performance (3)

HP 405 Adapted Physical Activity (3)

HP 414 Physiology of Exercise (3)

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## Physical Education

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### Required for All Majors (Option):

Choose one of the following options.

#### GENERAL OPTION

##### Required (Option, 11 credits):

BIOL 220 Human Anatomy (4)  
BIOL 230 Human Physiology (4)  
CHEM 100 Chemistry in Society (3)

Minor Required: Yes. Any.

#### EXERCISE SCIENCE OPTION

##### Required General Education (13 credits):

COMS 100 Introduction to Computer Science (4)  
MATH 112 College Algebra (4)  
CHEM 201 General Chemistry I (5)

##### Required Support Courses (16 credits):

MATH 113 Trigonometry (3)  
CHEM 202 General Chemistry II (5)  
BIOL 220 Human Anatomy (4)  
BIOL 230 Human Physiology (4)

##### Required for Option (Core, 18 credits):

HP 436 Nutrition in Exercise and Sport (2)  
HP 456 Athletic Testing and Conditioning (2)  
HP 465 Legal Aspects of Physical Education and Sport (3)  
HP 466 Graded Exercise Testing and Exercise Prescription (3)  
HP 467 Wellness Program Development and Administration (2)  
HP 496 Internship (6)

##### Required Electives for Option (15 credits):

15 credits of electives selected from list or recommended in consultation with advisor.

Required Minor: None

#### SPORTS MANAGEMENT OPTION

##### Required General Education for Option (7 credits):

COMS100 Introduction to Computer Science (4)  
CHEM100 Chemistry in Society (3)

##### Required Support Courses for Option (8 credits):

BIOL 220 Human Anatomy (4)  
BIOL 230 Human Physiology (4)

##### Required for Option (Core, 21 credits):

HP 441 Organization and Administration of Physical Education and Sport (2) **or**  
HP 462 Sport Administration (2)  
HP 460 Leadership and Management in Sport Organizations (3)  
HP 465 Legal Aspects of Physical Education and Sport (3)  
HP 468 Sport Promotion and Marketing (3)  
HP 499 Individual Study: Facilities (2)  
HP 496 Internship (8)

##### Required Electives for Option (17 credits):

Choose a minimum 17 credits of electives from Human Performance, Business, or RPLS, with consent of advisor.

Minor Required: None.

### PHYSICAL EDUCATION BS TEACHING

##### Required General Education (11 credits):

BIOL 100 Our Natural World (4)  
PSYC 101 Psychology (4)  
Choose one of the following:  
CHEM 105 Introduction to Chemistry (3)  
PHYS 101 Introductory Physics (3)

##### Required for Major (11 credits):

BIOL 220 Human Anatomy (4)  
BIOL 230 Human Physiology (4)  
HLTH 210 First Aid and CPR (3)

##### Required for Major (Performance Core, 12 credits):

HP 117 Aerobic Conditioning (1)  
HP 166 Team Games (1)  
HP 174 Individual Dual Activities: Gymnastics (1)  
HP 174 Individual Dual Activities: Track and Field (1)  
HP 175 Fitness Activities (1)  
HP 176 Lifetime Activities I: Tennis (1)  
HP 176 Lifetime Activities I: Badminton (1)  
HP 177 Lifetime Activities II: Archery (1)  
HP 177 Lifetime Activities II: Golf (1)  
HP 178 Social, Folk and Square Dance Techniques (1)  
HP 179 Winter Activities (1)  
HP 182 Aquatic Skills (1)

##### Required for Major (Theory Core, 33 credits):

HP 160 Introduction to Human Performance Studies (2)  
HP 266 Teaching Dance in Physical Education (1)  
HP 290 Psycho-Social Aspects of Sport (3)  
HP 320 Foundations of Motor Learning (3)  
HP 323 Elementary Physical Education Methods (2)  
HP 340 Prevention and Care (2)  
HP 348 Structural Kinesiology and Biomechanics (3)  
HP 380 Developing Teaching Skills (3)  
HP 386 Physical Education Teaching Techniques (2)  
HP 403 Measurement and Evaluation in Human Performance (3)  
HP 411 Developmental/Adapted Physical Education (3)  
HP 414 Physiology of Exercise (3)  
HP 432 Practicum in Teaching Physical Education (1)  
HP 441 Organization and Administration of Physical Education and Sport (2)

##### Professional Education Core (30 credits):

See the SECONDARY EDUCATION section for admission requirements to Professional Education and a list of required professional education courses.

Required Minor: None.

### PHYSICAL EDUCATION MINOR

##### Required for Minor (Human Performance, 4 credits):

Choose 4 credits from the following:

HP 166 HP 170 HP 174  
HP 175 HP 176 HP 177  
HP 178 HP 182

##### Required for Minor (Theory, 14 credits):

HP 160 Introduction to Human Performance Studies (2)

## Physical Education

HP	290	Psycho-Social Aspects of Sport (3)
HP	320	Foundations of Motor Learning (3)
HP	348	Structural Kinesiology and Biomechanics (3)
HP	411	Developmental/Adapted Physical Education (3)

### Required for Minor (Biology, 8 credits):

BIOL	100	Our Natural World (4)
BIOL	220	Human Anatomy (4)

### AQUATICS

This cluster of courses, associated with the Physical Education major, may be elected by majors or non-majors and is designed to prepare qualified aquatic leaders.

Pre: HP 182 or consent

### Required (Core, 11 credits):

HP	182	Aquatic Skills (1)
HP	250	Lifeguard Training (2) or current ARC Lifeguard certification
HP	257	Water Safety Instructor (2) or current ARC WSI certification
HP	344	Aquatic Organization and Administration (2)
HP	491	In-Service (1)
HP	496-02	Internship (3)

### Required Electives (4 credits):

Choose 4 credits from the following courses:

HP	143	Aqua Exercise (1)
HP	145	Aquatic Conditioning and Water Polo (1)
HP	190	Sport Activity: Springboard Diving, Sailboarding, Synchronized Swimming (1)
HP	190	Sport Activity: SCUBA (1)
HP	241	Sailing (1)
HP	242	Canoeing (1)
HP	248	Stroke Analysis (1)
HP	301	Swimming Theory (1)

### POLICIES/INFORMATION

**GPA Policy.** A GPA of 2.00 is required.

**P/N Grading Policy.** Courses required in the major must be taken for a grade.

### COURSE DESCRIPTIONS

#### 101 (1) Developmental/Adapted Exercise

For students with disabilities who will benefit from a guided program of individualized exercise. F, S

#### 103 (1) Fitness for Living

Concepts and development of lifelong healthy exercise and nutritional habits. F, S

#### 104 (1) Adult Fitness

This course is designed to provide specific information and strategies to allow adults to develop or maintain life-long healthy exercise habits that impact physical fitness in one or more of the following areas: cardiovascular and muscular endurance, muscular strength, flexibility, and body composition. F, S

#### 105 (1) Beginner and Advanced Beginner Swimming

Introduction to basic swimming skills; basic rescue and

water safety skills and techniques; stroke instruction in front crawl, back crawl, elementary backstroke, breast-stroke, and sidestroke. F

#### 107 (1) Orienteering

This course is designed to introduce the student to the basics of orienteering and land navigation. Through 15 weeks of classes and instruction, the student will be able to understand the basic principles of navigation. The class will be 50% classroom instruction and 50% outdoor activity. On Demand

#### 114 (1) Billiards and Bowling

Theory and practice of billiards or bowling. F, S

#### 117 (1) Aerobic Conditioning

Theory and practice of aerobic conditioning. F, S

#### 130 (1) Self-Defense for Women

Includes street fighting techniques and personal safety tips. F, S

#### 138 (1) Beginning Horsemanship

Basic skills of horseback riding—western and English. F, S

#### 139 (1) Winter Survival

The winter survival (WS) seminar is designed to provide student with an introduction to winter survival techniques applicable to severe and varying weather conditions. Classroom lecture and outdoor hands-on training is utilized to accomplish course objectives. Winter survival is pass/fail. On Demand

#### 140 (2) Introduction to Athletic Training

Orientation to the profession of athletic training. Designed for students majoring in athletic training. F

#### 143 (1) Aqua Exercise

Development of cardiovascular fitness, strength, flexibility, and endurance through a variety of exercise formats in the water. Swimming ability not a prerequisite. F, S

#### 145 (1) Aquatic Conditioning and Water Polo

Introduction to conditioning techniques for aquatic activities (swimming, triathlon, water polo, etc.). Development of cardiovascular fitness, strength, flexibility, and endurance. Individual/team skills and techniques of water polo.

Pre: Swim 500 yards without stopping S

#### 146 (1) Intercollegiate Bowling

Consent

Pre: Bowling experience/averages F

#### 147 (1) Intercollegiate Cross Country

Open for credit to those on the intercollegiate team.

Pre: Selection for team F

#### 148 (1) Intercollegiate Softball

Open for credit only for those students who make the MSU team and who complete the requirements.

Pre: Selection for team S

#### 149 (1) Intercollegiate Volleyball

Open for credit only for those students who make the



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## Physical Education

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MSU team and who complete the requirements.

Pre: Selection for team F

### **150 (1) Intercollegiate Wrestling**

Open for credit to those who make the wrestling team and complete the requirements.

Pre: Selection for team S

### **152 (1) Intercollegiate Track and Field**

Open for credit to those who make the team and complete the requirements.

Pre: Selection for team S

### **153 (1) Intercollegiate Swimming**

Open for credit only for those students who make the MSU team and who complete the requirements.

Pre: Selection for team S

### **154 (1) Intercollegiate Football**

Daily practice Monday through Friday.

Pre: Selection for team F

### **155 (1) Intercollegiate Basketball**

Must be on intercollegiate roster.

Pre: Selection for team S

### **156 (1) Intercollegiate Baseball**

Class for only students on the intercollegiate baseball team. Need permission to register.

Pre: Selection for team S

### **157 (1) Intercollegiate Golf**

Open for credit to those who make the team and complete the requirements.

Pre: Selection for team S

### **158 (1) Intercollegiate Tennis**

Open for credit to those who make the team and complete the requirements.

Pre: Selection for team S

### **159 (1) Intercollegiate Hockey**

This course is admission by permission only. The course is limited to male students who are members of the MSU intercollegiate hockey team.

Pre: Selection for team S

### **160 (2) Introduction to Human Performance Studies**

Introduction to physical education and exercise science. Majors, minors, and concentrations in the field. To acquaint physical education majors and minors with an overview of the physical education and exercise science profession. F

### **161 (1) Intercollegiate Soccer**

Participation in NCAA II soccer.

Pre: Selection for team F

### **166 (1) Team Game Skills I**

Flag/Touch Football, Softball (fast and slow pitch), Soccer, Speedball, Ultimate, Volleyball, Basketball, Team handball. F, S

### **170 (1) Team Game Skills II**

### **174 (1) Individual-Dual Activities**

Participation and increase skill knowledge through activity in track and field or gymnastics. F, S

### **175 (1) Fitness Activities**

Participation and increase skill knowledge through activity in body building, physical conditioning, and aerobics. F, S

### **176 (1) Lifetime Activities I**

Acquaint student with the basic skills, strategy and rules of badminton, tennis, or racquetball. F, S

### **177 (1) Lifetime Activities II**

Basic skills and knowledge of terminology, rules, and strategy in archery or golf. F, S

### **178 (1) Social, Folk and Square Dance Techniques**

Techniques of traditional folk dance, square dance and fundamentals of a variety of social dances. F, S

### **179 (1) Winter Activities**

Skiing, cross-country skiing, ice skating, or snowboarding. S

### **182 (1) Aquatic Skills**

Overview of aquatic skills and activities. Basic techniques and practical experience in teaching aquatic skills and activities.

Pre: Human Performance major or Aquatic emphasis. Ability to swim front crawl, back crawl, elementary backstroke, breaststroke, sidestroke. Developing teaching skills and curriculum. F, S

### **190 (1) Sport Activities**

Variable content based on demand.

Pre: Varies depending on activity F, S

### **241 (1) Sailing**

Students must furnish Coast Guard approved wearable life preserver. Beginning and intermediate sailing techniques. Sailboat racing.

Pre: Swimming ability On Demand

### **242 (1) Canoeing**

Paddling skills and safety/rescue techniques. Beginning white water skills. Students must provide their own personal floatation devices.

Pre: Swimming ability On Demand

### **245 (1) Intermediate Swimming**

Advanced strokes: butterfly, overarm sidestroke, trudgeon, inverted breaststroke. Competitive strokes and turns. Springboard diving. Aquatic Art. Mask and snorkel skills. Safety/rescue skills. Water exercise. Water polo. Pre: Front crawl, back crawl, elementary backstroke, sidestroke, breaststroke F, S

### **248 (1) Stroke Analysis**

Stroke technique and theory in front crawl, back crawl, elementary backstroke, breaststroke, sidestroke, butterfly. Individual stroke analysis/video taping. Development of cardiovascular fitness, strength, flexibility, and endurance. Pre: Ability to swim strokes F

### **250 (2) Lifeguard Training**

Explanations, demonstrations, practice, and review of skills required of lifeguards. Red Cross certification.

## Physical Education

Pre: Swim 500 yards. Front crawl, breaststroke, elementary backstroke, sidestroke On Demand

### 252 (1) Officiating Theory

The course is designed to give an overview of approximately five sports. Emphasis is placed on the philosophy behind sport officiating. Discussion involves how to get started, organization helpful to officials, learning materials, stipends to be earned, types of equipment and cost. S

### 257 (2) Water Safety Instructor (WSI)

American Red Cross requirements for Water Safety Instructor (WSI) certification. Practical experiences included. Pre: Swim 500 yards. Front crawl, back crawl, elementary backstroke, breaststroke, sidestroke On Demand

### 265 (1) Orientation to Occupational and Physical Therapy

Academic direction for admission into a school of occupational or physical therapy. Information and experiences regarding roles and responsibilities of occupational and physical therapists. F

### 266 (2) Teaching Dance in Physical Education

Methods and materials for teaching creative dance/movement and dance technique to children K-12. Includes practicum experiences with varied age groups. F, S

### 290 (3) Psycho-Social Aspects of Sport

Examines sport from a social-psychological perspective. To identify and discuss ways in which societal values affect the character of sport and the people involved. Pre: SOC 101 F, S

### 291 (2) Concepts of Fitness and Sport

Adult fitness, from theory to practice. F, S

### 301 (1) Swimming Theory

Methods, procedures, and philosophy of coaching competitive swimming. Pre: Competitive swimming experience S

### 302 (1) Wrestling Theory

Methods and procedures used in coaching. Pre: Wrestling experience or wrestling class F

### 303 (1) Volleyball Theory

Methods and procedures used in coaching volleyball. Pre: Volleyball experience or consent F

### 304 (1) Track and Field Theory

Methods and procedures used in coaching. S

### 305 (1) Baseball Theory

Methods and procedures used in coaching baseball. F

### 306 (1) Football Theory

Course designed to teach the various techniques and philosophies of the game of football for prospective coaches. Open enrollment-male or female. F

### 308 (1) Hockey Coaching Theory

The course is designed for those interested in coaching hockey at the youth and high school level. On Demand

### 309 (1) Basketball Coaching Theory

Methods and procedures used in coaching. S

### 310 (1) Softball Theory

Methods and procedures used in coaching. Pre: Softball experience or consent S

### 311 (1) Track & Field/Cross Country Theory

Methods and procedures used in coaching. On Demand

### 316 (1) Tennis Theory

Methods and procedures used in coaching. On Demand

### 317 (1) Golf Coaching Theory

Methods and procedures used in coaching. On Demand

### 318 (1) Soccer Theory

Methods and procedures used in coaching. F

### 320 (3) Foundations of Motor Learning

Analysis variables which affect the learning, performance, and retention of motor skills. Pre: PSYC 101 F, S

### 323 (2) Elementary Physical Education Methods

Methods and materials for teaching physical education in the elementary school. Precedes PE 324 and student teaching. F, S

### 340 (2) Prevention and Care

Basic recognition, prevention, and care of athletic injuries. Designed for coaching certificate candidates, coaching minors, and physical education majors. Pre: BIOL 220, HLTH 210 F, S

### 341 (3) Athletic Training Techniques

Recognition, prevention, and care of athletic injuries. Proper selection, care, and use of protective sports equipment. Designed for the athletic training major student. Pre: Consent and BIOL 220, BIOL 230, HP 140 S

### 342 (3) Evaluation Techniques I

Athletic training lecture and laboratory application of athletic training techniques and principles of the lower body. Pre: Consent and HP 341 F

### 343 (3) Evaluation Techniques II

Athletic training lecture and laboratory application of athletic training techniques and principles of the upper body. Designed for the athletic training student. Pre: Consent, HP 341, HP 342 S

### 344 (2) Aquatic Organization and Administration

Development of skills necessary to organize and administer aquatic programs (seasonal and yearly). Pre: Lifeguard Training/WSI or consent S

### 346 (1) Evaluation Techniques I Clinical

The focus of this clinical course is on the subjective and objective clinical assessment of injury/illness to the lowback and lower extremities of physically active populations. The clinical education component will involve the acquisition and practice of clinical skills required for a comprehensive injury assessment of the lower

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## Physical Education

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body. The field experience component will provide them with the opportunity to apply these skills in the clinical (i.e., the athletic training room, practice/game coverage) environment.

Pre: HP 341 and HP 342 concurrent F

### **347 (1) Evaluation Techniques II Clinical**

The focus of this clinical course is on the subjective and objective clinical assessment of injury/illness to the upper body and extremities of physically active populations. The clinical education component will involve the acquisition and practice of clinical skills required for a comprehensive injury assessment of the upper body. The field experience component will provide them with the opportunity to apply these skills in the clinical (i.e., the athletic training room, practice/game coverage) environment.

Pre: HP 341, HP 342, and HP 343 concurrent S

### **348 (3) Structural Kinesiology and Biomechanics**

A study of the structural and biomechanical functions of the muscular system during physical activity, sport, and exercise.

Pre: BIOL 220, BIOL 230, PHYS 101 F, S

### **354 (1) Physiology of Exercise for Coaches**

The purpose of this course is to acquaint the student with the basic information regarding the physiological response of the human body to acute and chronic exercise. All material presented will be approached from a practical perspective with an emphasis on application for coaches.

On Demand

### **371 (2) Scientific Principles of Sport**

This course is designed to acquaint the coaching licensure student with the basic principles of structural kinesiology and biomechanics.

Pre: BIOL 220, BIOL 230, PHYS 101 On Demand

### **380 (3) Developing Teaching Skills**

Designed to prepare preservice physical education teacher with instructional skills necessary for effective teaching in physical education.

F, S

### **386 (2) Physical Education Teaching Techniques**

Theory and practice, class organization and methods of teaching team sports and games, individual sports and games, fitness activities, gymnastics, wrestling and track and field.

F, S

### **403 (3) Measurement and Evaluation in Human Performance**

Provides an introduction to measurement and evaluation commonly used in physical education and exercise science. This encompasses the administration of skills and performance tests, interpretation of results, basic statistical analysis, and grading/evaluating performance.

F, S

### **405 (3) Adapted Physical Activity**

Course is designed for preprofessionals who will be working in adapted physical activity outside the school setting. The course is for students with physical education majors in the Exercise Science and Athletic Train-

ing tracks, and students with majors from other departments who are interested in adapted physical activity for adult populations.

F

### **411 (3) Developmental/Adapted Physical Education**

Legal and theoretical bases for teaching physical education to students with disabilities. First course in D/APE sequence.

F, S

### **412 (2) Assessment in Adapted Physical Education**

Evaluation of motor skills and fitness among students with disabilities.

F, S

### **413 (2) Lifespan Motor Development**

Study of early childhood motor development from infancy through preschool age, including information on delayed development.

F, S

### **414 (3) Physiology of Exercise**

Introductory study of the effects of both acute and chronic exercise on structure and function of the human body across the life span.

Pre: BIOL 220, 230, HP 175 F, S

### **419 (2) Teaching Dance to Individuals with Special Needs**

Adaptation of dance materials to facilitate learning of individuals with special needs through simulated and hands-on teaching experiences.

Pre: HP 109 On Demand

### **421 (2) Teaching Sport to Individuals with Disabilities**

Contemporary sport opportunities for individuals with disabilities, with application to teaching and transition planning.

Pre: HP 411 or consent F

### **422 (2) Teaching Adapted Aquatics**

Theory and practical experience in teaching swimming and other aquatic skills to individuals with disabilities.

S

### **432 (1) Practicum in Elementary Physical Education**

Student practicum experience in a teaching situation prior to student teaching.

Pre: HP 320, 323 and 413 F, S

### **436 (2) Nutrition in Exercise and Sport**

This course provides an overview of the dietary needs of physically active individuals and athletes with a special focus on the issues of hydration, eating designed to replenish energy stores, and gaining and losing weight to enhance athletic performance.

Pre: HP 414 S

### **440 (3) Medical Aspects of Athletic Training**

Advanced medical lectures on various athletic injuries, surgical procedures, illnesses, and conditions. Designed for the athletic training student

Pre: Consent and HP 341, 348 F, S

### **441 (2) Organization and Administration of Physical Education and Sport**

Planning, organizing, controlling, resource allocation, communication, marketing, public relations, and legal aspects of physical education and sport.

F, S

## Physical Education

### 442 (2) Therapeutic Modalities and Rehabilitation Techniques

Theory and application of medical equipment and rehabilitation exercises prescribed for treatment and management of athletic injuries. Designed for the athletic training student.

Pre: Consent and HP 341, 342 F

### 444 (2) Rehabilitation Techniques

Techniques to integrate the knowledge base of strengthening and conditioning in rehabilitation with application to specific injuries received in sports participation. Rehabilitation strategies are designed to utilize strength and conditioning principles and functional range of motion techniques, to prepare athletes for safe return to full activity.

Pre: HP 342 and concurrent HP 343 S

### 445 (3) Physical Education for Students with Mental and Emotional Disabilities

Theory, strategies and best practices for teaching physical education to students with mental retardation, emotional/behavioral disorders, autism, attention deficit disorder, and multiple disabilities accompanying mental retardation.

S

### 456 (2) Athletic Testing and Conditioning

Physiological base for testing process, interpretation of results and the conditioning process as used with the athlete. Methodologies of nutritional assessment and the integration of sound nutritional principles in an athletic environment.

Pre: HP 414 F

### 460 (3) Leadership and Management in Sport Organizations

This course emphasizes ethics in management, philosophy, motivation, leadership theory, problem solving and decision-making, and financial concerns in sport organizations.

F

### 462 (2) Sports Administration

Planning, organizing and conducting extra curricular sports activities in the secondary school setting.

F, S

### 465 (3) Legal Aspects of Physical Education and Sport

To provide legal and safety aspects in physical activity. Legal liability, civil rights, and contract law are emphasized.

F, S

### 466 (3) Graded Exercise Testing and Exercise Prescription

An introduction to basic graded exercise tests and exercise prescription commonly used in clinical as well as health/wellness appraisal settings.

Pre: HP 175, HP 414 F

### 467 (2) Wellness Program Development and Administration

This course will review the various physiological, psychological, and administrative components involved in a comprehensive health/fitness program.

Pre: HP 414 and 466 or equivalent S

### 468 (3) Sport Promotion and Marketing

The study of marketing theory, research, strategies, and techniques in the areas of market segmentation, sport products, licensing and merchandising, market research, pricing, promotions, sales, public relations, electronic media, sponsorship and consumer behavior as it applies to the marketing sport or marketing products through sport.

F, S

### 470 (3) Psychology of Coaching

To introduce interested students, professionals, and coaching licensure candidates to the psychological literature and latest techniques associated with coaching in an athletic setting.

Pre: PSYC 101 or equivalent F, S

### 471 (3) Consulting Techniques in Developmental/Adapted Physical Education

Pre: HP 411, 412, 445 F

### 480 (3) Senior Seminar

Emphasis on research in sports medicine and athletic training.

Pre: Consent, HP 343, 422 S

### 481 (1-4) Practicum in Athletic Training

Practicum in athletic training is designed to provide the athletic training student with supervised clinical experience outside of the traditional athletic training setting, in affiliated high school and clinical settings.

Pre: Consent F, S

### 482 (1) Coaching Practicum

Supervised experience in a public school varsity/junior varsity sport setting.

Pre: First aid and coaching theory and HP 340 F, S

### 483 (3) Cardiac Rehabilitation

A course designed to provide experience for persons seeking leadership roles in institutions housing programs of rehabilitative cardiovascular exercise and risk factor intervention.

Pre: HP 414 and 467 or equivalent F, S

### 484 (1) Clinical Techniques in Athletic Training I

This course is designed to provide the athletic training student with supervised clinical instruction and supervised clinical experience outside of the traditional athletic training setting, in affiliated high school and clinical settings. It is also intended to provide the student with clinical instruction and continuing evaluation in athletic training techniques in accordance with accreditation guidelines.

Pre: HP 343, HP 442, HP 444, concurrent HP 456 F

### 485 (1) Clinical Techniques in Athletic Training II

This course is designed to provide the athletic training student with supervised clinical instruction in the athletic training laboratory. It is also intended to provide the student with clinical instruction and continuing evaluation in athletic training techniques.

Pre: HP 343, 442, 444, and 484 F

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## Physical Education

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### 490 (1-4) Workshop

Content is variable and based on special topic. F, S

### 491 (1-4) In-Service

Broad spectrum of foci available. Designed in consultation with requesting group. F, S

### 492 (1-10) Internship: Corporate and Community Fitness

This internship is designed to provide the student with practical experience in the area of corporate and community fitness.

Pre: Completion of required core CCF courses: HP 348, HP 414, HP 436, HP 465, and HP 466. F, S

### 493 (2) Internship in Developmental/Adapted Physical Education

Supervised hands-on experience teaching physical education to students with disabilities.

Pre: HP 411 and 445 F, S

### 496-01 (1-10) Internship

Designed as an intense practical experience in a selected area. F, S

### 496-02 (1-10) Internship: Aquatics

Internship in aquatics leadership and administration for Aquatics emphasis.

Pre: Aquatic in-service and aquatic certifications (WSI and lifeguard training) F, S

### 499 (1-5) Individual Study

Topics for reading and/or research in human performance to be arranged between student and faculty. This must be done prior to registration. F, S

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## Physics

*College of Science, Engineering & Technology*

*Department of Physics & Astronomy*

141 Trafton Science Center N • 507-389-5743

Web site: [www.mnsu.edu/dept/physast](http://www.mnsu.edu/dept/physast)

Chair: Louis A. Schwartzkopf

Edward R. Borchardt, Robert J. Herickhoff, Igor Kogoutiuk, Mark A. Pickar, Hai-Sheng Wu, Youwen Xu

The physics programs available to the student are designed to prepare the student for graduate work, for a career in industry or government, or for high school teaching. Degree requirements provide graduates with laboratory skills useful both in graduate work and in industry and business.

**Admission to Major** is granted by the department.

Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

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### PHYSICS BA

This major is intended to prepare the student for work in industry or business after the bachelor's degree rather than for graduate work.

### Required General Education (9 credits):

MATH 121 Calculus I (4)

PHYS 221 General Physics I (5)

### Recommended Support Courses (18 credits):

CHEM 201 General Chemistry I (5)

CHEM 202 General Chemistry II (5)

COMS 272 FORTRAN Programming (4)

ENG 271 Technical Communication (4)

### Required for Major (46 credits):

EE 230 Circuit Analysis (3)

EE 240 Evaluation of Circuits (1)

MATH 122 Calculus II (4)

MATH 223 Calculus III (4)

MATH 321 Ordinary Differential Equations (4)

PHYS 222 General Physics II (5)

PHYS 435 Modern Physics I (3)

PHYS 436 Modern Physics II (3)

PHYS 441 Mechanics (4)

PHYS 447 Electricity and Magnetism I (3)

PHYS 457 Optics (3)

PHYS 461 Quantum Mechanics (4)

PHYS 465 Computer Applications in Physics (3)

PHYS 475 Advanced Laboratory (2)

### Required Electives (3 credits):

Choose one of the following:

PHYS 453 Solid State Physics (3)

PHYS 473 Statistical Physics (3)

### Other Requirements:

Modern Language (8)

### Required Minor: None.

### PHYSICS BS

Students interested in physics preparation leading to professional opportunities or graduate study are encouraged to select this major.

### Required General Education (9 credits):

MATH 121 Calculus I (4)

PHYS 221 General Physics I (5)

### Recommended Support Courses (22 credits):

CHEM 201 General Chemistry I (5)

CHEM 202 General Chemistry II (5)

COMS 272 FORTRAN Programming (4)

ENG 271 Technical Communication (4)

MATH 422 Partial Differential Equations (4)

### Required for Major (55 credits):

EE 230 Circuit Analysis I (3)

EE 240 Evaluation of Circuits (1)

MATH 122 Calculus II (4)

MATH 223 Calculus III (4)

MATH 321 Ordinary Differential Equations (4)

PHYS 222 General Physics II (5)

PHYS 435 Modern Physics I (3)

PHYS 436 Modern Physics II (3)

PHYS 441 Mechanics (4)

PHYS 447 Electricity and Magnetism I (3)

PHYS 448 Electricity and Magnetism II (3)



PHYS	453	Solid State Physics (3)
PHYS	457	Optics (3)
PHYS	461	Quantum Mechanics (4)
PHYS	465	Computer Applications in Physics (3)
PHYS	473	Statistical Physics (3)
PHYS	475	Advanced Laboratory (2)

**Required Minor: None.**

## PHYSICS MINOR

**Required Support Courses (8 credits):**

MATH 121 MATH 122

**Required for Minor (14-16 credits):**

Choose one of the following sequences of introductory physics courses:

PHYS 221 General Physics I (5) **AND**

PHYS 222 General Physics II (5)

**or**

PHYS 211 Principles of Physics I (4) **AND**

PHYS 212 Principles of Physics II (4)

**Also Required:**

PHYS 435 Modern Physics I (3)

PHYS 436 Modern Physics II (3)

**Required Elective**

Choose a minimum of one course from the following courses:

PHYS 441 PHYS 447 PHYS 467

PHYS 453 PHYS 457 PHYS 461

PHYS 465 PHYS 473 PHYS 475

## PHYSICAL SCIENCE TEACHING BS

Requirements for programs in teaching the physical sciences can be found in the SCIENCE TEACHING section of this bulletin. There is a new physics teaching program which will take effect for students applying for licensure after September 2001.

Students intending to teach physics in states other than Minnesota are advised to elect either the BA or the BS Physics major and use elective credits to satisfy the professional education course requirements. For additional information confer with the science teaching advisor.

## POLICIES/INFORMATION

**GPA Policy.** A minimum GPA of 2.0 in physics courses is required for graduation.

Refer to College information on page 30 regarding required advising for students on academic probation.

**P/N Grading Policy.** All physics courses except PHYS 105 and 480 are open to P/N grading; however, a student majoring or minoring in physics must elect the grade option for all of the required courses.

A minimum of 25 percent of the required credits in physics must be taken at MSU for both the major and the minor. Testing for credit by examination is available on a case-by-case basis as determined by the Physics and Astronomy Department chairperson.

Electives in physics may include AST 420, 421 and/or 440. Students may receive credit for only one course in each of the following pairs of courses: PHYS 211 and 221, 212 and 222. Four credits of 100-level courses may be allowed toward the B.S. (teaching) major, provided they are completed before PHYS 211 (221). PHYS 482 counts only toward the B. S. teaching degree.

**B.S. Degree, Double Major.** Students majoring in physics often find a second major in mathematics or astronomy to be an attractive option. If the B.S. degree in physics is combined with a B.S. degree in mathematics, then the following math courses are recommended: MATH 345, 321, 422, 425, and 447.

## COURSE DESCRIPTIONS

### 100 (3) Cultural Physics

Self-paced format, open laboratory component. Includes the history, philosophy and growth of science from myth to the present. Included are readings on Galileo, Newton, the Industrial Revolution, and the modern scientific revolution. The relationship of science to art, archaeology, politics, weapons, medicine, technology, research and development, and the universe are discussed. F, S

### 100-10 (3) Cultural Physics

Self-paced format, open laboratory component. Includes history, philosophy, growth of science from myth to present. Readings on Galileo, Newton, Industrial Revolution, modern scientific revolution included. Relationship of science to art, archaeology, politics, weapons, medicine, technology, research and development, and the universe are discussed. Biography of prominent woman physicist, Joan Freeman, included. This is available for cultural diversity credit. F, S

### 101 (3) Introductory Physics

A one semester course which covers the basic principles of physics on a conceptual level and with a minimal amount of math. The course provides an understanding of natural processes and their applications. Topics generally include mechanics, simple machines, atomic structure, heat, light and sound. Lecture and laboratory components. F, S

### 102 (3) Physics in the World Around Us

A one semester course which covers the basic principles of physics on a conceptual level. The course provides an understanding of natural processes and their applications to technology (or how things work!), including the greenhouse effect and nuclear power. Lecture only. F, S

### 105 (3) Time, Atomic Clocks, and Relativity

Self-paced format. Includes readings on time; telling time from sundials to atomic clocks; Albert Einstein (a biography of the primary developer of the Theory of Relativity); and the Theory of Relativity. All the readings are written to be understood by non-scientists. F, S

### 107 (3) Physics of Flight

A one semester course which covers the basic principles

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## Physics

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of physics and flying on a conceptual level. Minimal math will be required. The course provides an understanding of physics and how it applies to the technology of flight. Topics include lift and drag; power plants and propulsion; stability; control; aircraft performance and history; subsonic and supersonic aerodynamics. Intended for students interested in aviation. Lecture, discussion, guided experiences at the University and at the Mankato airport. V

### 110 (3) Physics Our Audio Environment

A one semester course which covers the basic principles of physics as they apply to audio systems, their specifications, and our audio environment. Presented at a conceptual level. Lecture and laboratory. V

### 211 (4) Principles of Physics I

General background in physical concepts for those who do not plan advanced study in physics or engineering. Topics include mechanics, fluids, heat and thermodynamics. Lecture and laboratory.

Pre: Either MATH 112 and 113 or MATH 115; either high school physics or PHYS 101; or consent F, S

### 212 (4) Principles of Physics II

Includes waves and sound, electricity and magnetism, light and optics, and topics in modern physics. Lecture and laboratory.

Pre: PHYS 211 F, S

### 221 (5) General Physics I

Designed for science and engineering students. Covers elementary mechanics including dynamics of particles, work and energy, rotational motion, and gravitation. Also discusses oscillations and thermodynamics. Lecture and laboratory.

Pre: MATH 121, high school physics or PHYS 101 F, S

### 222 (5) General Physics II

Designed for science and engineering students. Covers waves and sound, electricity and magnetism, DC and AC circuits, electromagnetic waves, geometrical and wave optics, and modern physics. Lecture and laboratory.

Pre: PHYS 221 F, S

### 381 (1-3) Tutoring Physics

Supervised experience as an instructional assistant. Must demonstrate ability in basic physics.

Pre: Consent V

### 404 (2) Physics and Society

Relations between physics and other intellectual communities: e.g., philosophy, humanities, social sciences, the arts.

Pre: Consent V

### 417 (2) Biophysics

Thermodynamic relationships; energy flow in living systems; metabolic heat generation and loss; homeostasis; atomic and molecular bonds in nucleic acids, proteins, and carbohydrates; hormonal regulation; cell metabolism; negative feedback control in living systems; cancer therapy; imaging; disease states; new theories and paradigms.

Pre: PHYS 212 or 222 and MATH 122 V

### 435 (3) Modern Physics I

Special Theory of Relativity. Quantum nature of waves and particles: photons, de Broglie wavelength of matter and wave packet description of particles, Bohr model of hydrogen. Schrodinger wave equation in one-dimension: energy quantization, potential barriers, simple harmonic oscillator. One-electron atoms. X-ray and optical excitation of multielectron atoms. Lecture and laboratory.

Pre: PHYS 212 or 222 and MATH 122 S

### 436 (3) Modern Physics II

Topics include nuclear force, interactions of nuclear particles with matter, radioactive decay, nuclear structure, nuclear reactions, fission, fusion, elementary particles, and the quark model. Lecture and laboratory.

Pre: PHYS 435 F

### 441 (4) Mechanics

Rectilinear motion of a particle, general motion of a particle in three dimensions, Newtonian mechanics including harmonic oscillations, forced oscillations, central forces and orbital motion, collisions, noninertial reference systems, dynamics of a system particles, rigid body motion, Lagrangian and Hamiltonian mechanics, normal coordinates.

Pre: PHYS 212 or 222 and MATH 223 F

### 447 (3) Electricity and Magnetism I

Electrostatic fields, magnetostatic fields, steady currents, electromagnetic induction. Review of vector algebra.

Pre: PHYS 212 or 222 and MATH 223, 321, or 422 F

### 448 (3) Electricity and Magnetism II

Electromagnetic waves, propagation and radiation of waves, electrodynamics and relativity.

Pre: PHYS 447 S

### 453 (3) Solid State Physics

Atoms in crystals, wave in crystals, thermal vibrations of the crystal lattice, free electron model, band theory of solids, semiconductors and PN junctions, magnetism, and superconductivity.

Pre: PHYS 435 ALT-S

### 457 (3) Optics

Geometric optics, wave optics, properties of light and matter, optics of transformations, and quantum optics. Lecture and laboratory.

Pre: PHYS 212 or 222 and MATH 122 ALT-S

### 461 (4) Quantum Mechanics

A systematic development of foundations of quantum mechanics. Observables, operators, state functions, expectation values. Matrix formulation of eigenvalue problems. The hydrogen atom, electron spin, angular momentum, and perturbation theory.

Pre: PHYS 435, 441, and MATH 321 F

### 465 (3) Computer Applications in Physics

Numerical solutions of physics problems and computer simulations of physical systems. Lecture and laboratory.

Pre: Familiarity with some programming language, PHYS 212 or 222, MATH 122; or consent F

## Political Science

### 467 (3) Semiconductor Device Physics

Introduction to theory and techniques of integrated circuit fabrication processes. Oxidation, photolithography, etching, diffusion of impurities, ion implantation, epitaxy, metallization, material characterization techniques, and VLSI process integration, their design and simulation by SUPREM. Same as EE 475.

Pre: PHYS 435 and 453 F

### 468 (1) Semiconductor Device Physics Laboratory

Introduction to integrated circuit fabrication processes, device layout, mask design, and experiments related to wafer cleaning, etching, thermal oxidation, thermal diffusion, photolithography, and metallization. Fabrication of basic integrated circuit elements: pn-junctions, resistors, MOS capacitors, simulation or the fabrication process by SUPREM. Same as EE 480. To be taken concurrently with PHYS 467 F

### 473 (3) Statistical Physics

Statistical mechanics, kinetic theory, thermodynamics. Pre: PHYS 212 or 222 and MATH 223 and 321

ALT-S

### 475 (2) Advanced Laboratory

Experiments in modern physics, including solid-state physics and optics. Requires more independent work than introductory laboratories.

Pre: PHYS 436 or consent S

### 480 (2) Laboratory Experiences in Physical Science

For prospective teachers in elementary schools. Topics include weather, weather forecasting and record keeping, simple machines, electricity, chemistry, sound, light, and others. May not count as a physics elective. Not available for P/N grading.

Pre: PHYS 101 F, S

### 482 (4) Teaching Methods and Materials in Physical Science

Current methods of teaching all physical sciences with emphasis on physics and chemistry. For students planning to teach at a middle school, secondary school, college, or a university.

Pre: CI 447, one year of chemistry and one year of physics, or consent S

### 484 (2) Middle/Junior High Science Teaching

Current methods of teaching all sciences with emphasis on physical science, physics, chemistry, and earth science.

Pre: Majority of required courses completed, or consent V

### 490 (2-4) Workshop

A short course devoted to a specific topic in physics. May be repeated for credit on each new topic. V

### 491 (1-8) In-service

A course designed to upgrade the qualifications of persons on-the-job. V

### 492 (1-3) Seminar

May be repeated for credit on each new topic. Pre: Sr. standing V

### 493 (1-6) Undergraduate Research

Pre: Consent V

### 495 (1-3) Selected Topics

A course in an area of physics not regularly offered. Topic and credit assigned by department each time offered.

Pre: PHYS 435 and 436 V

### 497 (1-16) Internship

Provides a student with the opportunity to gain expertise and experience in a special field under the supervision of a qualified person.

Pre: Usually Sr. standing V

### 499 (1-8) Individual Study

Special arrangements must be made with an appropriate faculty member of the department office. May be repeated for credit on each new topic.

Pre: Consent V

## Political Science

*College of Social & Behavioral Sciences*

*Department of Political Science/Law Enforcement*

109 Morris Hall • 507-389-2721

Web site: [www.mnsu.edu/dept/psle/welcome.edu](http://www.mnsu.edu/dept/psle/welcome.edu)

Chair: Doran Hunter

Abdalla Battah, Susan Burum, Doran Hunter, Tomasz Inglot, Avra Johnson, Joseph Kunkel, John Parham, Carolyn Shrewsbury, Fred Slocum, Jackie Viececi

Political Science is the systematic study of politics, power relationships and government. Political Science is in one sense an ancient discipline: Aristotle called it the "queen of the sciences." Yet the focus for much of today's political science was developed in the past sixty years. Scientific observations have now joined older philosophical traditions. Modern political science examines politics in the United States, countries and regions of the world and in international relations. It explains how and why public decisions are made. Political Science majors can qualify for a wide variety of careers in public and private sector organizations, including business, law, government, journalism, international organizations and finance, political campaigns, interest groups and secondary and college teaching. The study of public affairs and government is essential for developing effective citizenship. This training prepares one for professional or volunteer involvement in community organizations, issue movements, electoral politics, and other activities in the public arena.

**Admission to Major** is granted by the department.

Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

### POLITICAL SCIENCE BA, BS

**Required for Major (Core, 3 credits):**

POL 221 Introduction to Political Analysis (3)

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## Political Science

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### Required for Major (Options, 30 credits):

Complete at least 15 credits in one of the four areas.

Subareas: Complete at least one course from five of the eight subareas. (15 credits)

#### AREA A: Theory and Methods

##### Subarea 1: Theory

- POL 311 Ancient and Medieval Political Philosophy (3)
- POL 312 Modern Political Philosophy (3)
- POL 313 Contemporary Political Philosophy (3)
- POL 410 Topics in Political Philosophy (1-4)
- POL 414 Early United States Political Thought (3)
- POL 415 Recent United States Political Thought (3)
- POL 416 Nonwestern Political Philosophy (3)
- Subarea 2: Methods
- POL 321 Public Policy Analysis and Evaluation (3)
- POL 420 Topics in Political Methods (1-4)
- POL 421 Research Methods (3)
- POL 423 Public Opinion and Polling Methods (3)

#### AREA B: International Relations and Comparative Politics

##### Subarea 3: International Relations

- POL 231 World Politics (3)
- POL 430 Topics in International Relations (1-4)
- POL 431 International Relations (3)
- POL 432 International Law (3)
- POL 433 International Organization (3)
- POL 434 U.S. Foreign Policy (3)

##### Subarea 4: Comparative Politics

- POL 241 Introduction to Comparative Politics (3)
- POL 342 Asia Pacific Rim: Politics and Policy (3)
- POL 435 Capitalism, Nationalism, & Democracy (3)
- POL 439 Comparative Social Policy: The Welfare State in Europe and the Americas (3)
- POL 440 Topics in Comparative Politics (1-4)
- POL 441 Russia and Neighboring States Politics (3)
- POL 442 South Asia: Politics and Policy (3)
- POL 443 Middle East Politics (3)
- POL 444 Latin America Politics (3)
- POL 446 African Politics (3)
- POL 447 Europe: Politics and Policy (3)
- POL 448 Political Development and Change (3)
- POL 449 Comparative Criminal Justice System (3)

#### AREA C: Public Law, Policy and Administration

##### Subarea 5: Public Law

- POL 450 Topics in Public Law (1-4)
- POL 451 Administrative Law (3)
- POL 452 Jurisprudence (3)
- POL 453 Constitutional Law (3)
- POL 454 Civil Liberties (3)

##### Subarea 6: Policy and Administration

- POL 260 Introduction to Public Administration (3)
- POL 361 Public Budgeting (3)
- POL 460 Topics in Public Policy/Administration (1-4)
- POL 461 Environmental Politics (3)
- POL 462 Collective Bargaining: Public Sector (3)
- POL 463 Public Personnel Administration (3)
- POL 464 Aging: Policy Issues (3)

#### AREA D: Institutions, Process, Behavior and Participation

##### Subarea 7: Institutions and Process

- POL 371 State and Local Government (3)
- POL 470 Topics in Institutions, Process (1-4)
- POL 472 Urban Government (3)
- POL 473 The Legislative Process (3)
- POL 474 The Executive Process (3)
- POL 475 The Judicial Process (3)
- Subarea 8: Behavior and Participation
- POL 381 Citizenship (1-4)
- POL 480 Topics in Participation and Behavior (1-4)
- POL 482 Campaigns and Elections (3)
- POL 483 Political Parties (3)
- POL 484 Women and Politics (3)
- POL 485 Terrorism and Political Violence (3)
- POL 486 Racial and Ethnic Politics (3)
- POL 487 Political Psychology (3)

With the approval of the advisor these courses may be used to satisfy the area and subarea requirements.

- POL 391 Colloquium (1-4)
- POL 490 Workshop (1-6)
- POL 491 Internship (1-12)
- POL 492 Individual Study (1-5)
- POL 493 Individual Study: Social Studies Teaching (1-3)

### Required for Major (Electives, 9 credits):

POL xxx POL xxx POL xxx

### Required for Bachelor of Arts (BA) degree ONLY:

Language (8)

### Total Credits Required for Major (42 credits)

### Required Minor: Yes. Any.

### POLITICAL SCIENCE MINOR

#### Required for Minor (18 credits):

Choose at least 18 credits, 12 credits at the 300-400 level.

POL Any Level	POL Any Level
POL 300-400	POL 300-400
POL 300-400	POL 300-400

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### POLICIES/INFORMATION

Students must consult with the program advisor who will approve and file the program of courses selected and approve changes in the program.

**GPA Policy.** Students must maintain an overall GPA of 2.0 in the Political Science major.

**Pass/No Credit Policy.** With the exception of internship credits, which must be taken on a P/N basis, no more than one-fourth of the credits in a political science major or minor may be taken as P/N. Internship credits will not be counted as part of the one-fourth limitation, but will be subtracted from the total hours required for the major or minor prior to the computation of the one-fourth limitation.

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## COURSE DESCRIPTIONS

### 100 (3) Introduction to Politics

Study of the nature of politics and government and their influence on society and human behavior. F, S

### 101 (3) Introduction to Public Life

Combine study with action to remake yourself into a democratic citizen. Consider your beliefs, debate issues and learn political skills. Integrate these in practical public work on a real issue or project in a student group or community organization.

### 102 (3) Politics of Diversity in Film

Use films and readings to understand the political implications of inequality and group identity in the US. Films helps students participate vicariously in experience of oppressed groups, reflect on their own attitudes and behavior regarding diversity, racism and bigotry.

### 103 (3) Thinking About Politics

This course is designed to help you to read, think and write critically about important concepts and issues in the study and practice of politics. It is intended to acquaint you with some of the great debates in political thought, increase your understanding of how political systems work and help you to develop your research and writing skills.

### 104 (3) Understanding the US Constitution

Rejoin the political debates of 1787 to understand the US Constitution. Compare the founding document with amendments, later usage and Supreme Court interpretations. Examine controversies over the meaning of the Constitution using the methods of political philosophers, historians, and legal scholars.

### 105 (2) Politics in Cyberspace

This course deals with the impact of information technology on politics, and develops the skills necessary to be an effective cyber citizen. It also examines political issues surrounding electronic information technology.

### 106 (3) Politics in the World Community

This introductory course examines key concepts and issues in contemporary world politics. It is a survey course covering topics including political culture, the political impact of economic globalization, the changing role of the state, nationality and ethnic identity, and issues of oppression and empowerment.

### 107 (3) Freedom and Authority

This course explores notions of freedom and authority across cultures and through time. By using political writings, literary works and film, the course examines issues including the nature and limits of legitimate authority, the nature and sources of freedom, limits to freedom, and the role of personal choice and conscience.

### 111 (3) United States Government

Become informed enough to play your part in governing the United States. Start by learning about the Constitution, our rights and freedoms, how the national government works and the opportunities and challenges of citizen influence. Political Science methods, and the challenges of citizenship are emphasized.

### 201 (1-3) Issues in Politics

Various topics of current interest. Topics covered in the past include political corruption, contemporary ideologies, revolution, understanding the United States Constitution, political films. Course may be taken more than once for credit. F, S

### 221 (3) Introduction to Political Analysis

Elementary analytical concepts and basic techniques for understanding and doing research in political science. F, S

### 231 (3) World Politics

An introduction to the dynamics of interactions among sovereign states and other global actors. F, S

### 241 (3) Introduction to Comparative Politics

This course is designed to acquaint undergraduates with the data and methods of comparative politics. Approaches to the study of comparative politics may include country studies, regional studies, global surveys focusing on specific policy areas or other issues, and general comparative theory. F, S

### 260 (3) Introduction to Public Administration

A survey of the topics relative to administration in the public sector, including the history of public administration, organization theory, leadership and management, human resources management, budgeting and finance, policy analysis, program evaluation, and government regulation. F, S

### 311 (3) Ancient and Medieval Political Philosophy

A survey of Western political philosophy from Plato through the Conciliar Movement. An examination of the origin and development of basic concepts defining the relationship between the person and the state: human nature, community, authority, power, legitimacy, obligation, accountability, government, liberty and personal responsibility. F

### 312 (3) Modern Political Philosophy

A survey of Western political philosophy from Machiavelli through Edmund Burke. An examination of the development of ideas about government from the 15th Century through the 18th Century. Emphasis is placed on origins of political authority, purposes for which government exists, relationships between government authority and individual rights, civic virtue, republicanism and democracy. S

### 313 (3) Contemporary Political Philosophy

A survey of Western political philosophy from Hegel through the post-modernist writers. An examination of 19th and 20th Century political philosophers emphasizing German transcendentalism, utilitarianism, economic determinism, state socialism, neoliberalism, communitarianism and post-modernism. V

### 321 (3) Public Policy Analysis and Evaluation

Traces the history of public policy analysis and program evaluation and provides rudimentary backgrounds on substantive policy areas, e.g., environmental policy;



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## Political Science

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models to analyze policies; and means to evaluate policies and programs. V

### **342 (3) Asia Pacific Rim: Politics and Policy**

Survey of the political processes, governmental institutions and policies of the countries of the Asian Pacific Rim, with special emphasis on China, Japan and the newly industrializing states of Southeast Asia. V

### **361 (3) Public Budgeting**

An overview of the budgetary and fiscal processes of public budgeting, including the politics surrounding public budgeting and fiscal policy decisions. V

### **371 (3) State and Local Government**

Institutions, processes, intergovernmental relations, and politics of U.S. state and local governments. F, S

### **381 (1-4) Citizenship**

Students integrate learning from readings on democratic theory and practice with real organizing activity. Each week students are involved with one period of semester study and one period of service as citizenship "coaches" at a middle school in our Public Achievement program. Students registering fall semester should also register spring semester. Permission required. F, S

### **391 (1-4) Colloquium**

Topics will vary. Typically each session of this colloquium is lead by a different speaker. The emphasis is upon the exchange of views. A single instructor typically will coordinate the colloquium and be responsible for the administrative aspects of the course.

Pre: Consent of advisor

V

### **410 (1-4) Topics in Political Philosophy**

This course explores topics in political philosophy beyond what is covered in the existing curriculum. Students study specialized topics of current importance in the field. Specific topics will change depending on the term and instructor. May be retaken with change of topic. V

### **414 (3) Early United States Political Thought**

Political thought in the United States from the colonial period to the Civil War. Puritans, American revolution, republicanism, debate over United States Constitution, Jacksonian Democracy, Thoreau, reformers and religious and secular utopias, womens' rights, states' rights, abolitionism, proslavery. V

### **415 (3) Recent United States Political Thought**

Political thought in United States from reconstruction to present. Controversies over industrial capitalism: Social Darwinism, Utopian Socialism, Populism, Socialism, Progressivism. Women's Rights, suffrage movement and contemporary feminism; African American political thought: liberalism; conservatism. V

### **416 (3) Nonwestern Political Philosophy**

This course introduces students to the political philosophies of major thinkers from Asia, Africa and the Middle East. The course is designed to enhance students' analytical and writing skills. V

### **420 (1-4) Topics in Political Methods**

This course explores topics in political science research methods beyond what is covered in the existing curriculum. Students study specialized topics of current importance in the field. Specific topics will change depending on the term and instructor. May be retaken with a change of topic. V

### **421 (3) Research Methods**

Research methods commonly used in political science and public administration. Emphasis on such topics as the scientific approach, research design, qualitative research and measurement issues.

Pre: POL 221 or consent

V

### **423 (3) Public Opinion and Polling Methods**

This course examines public opinion in American politics. Topics include the definition, nature and consequences of public opinion; political socialization; public opinion on selected issues; intergroup differences in public opinion, and public opinion polling methods.

### **430 (1-4) Topics in International Relations**

This course explores topics in international relations beyond what is covered in the existing curriculum. Students study specialized topics of current importance in the field. Specific topics will change depending on the term and instructor. May be retaken with a change of topic. V

### **431 (3) International Relations**

An advanced theoretical survey of the dynamics of politics and political change at the global level. S

### **432 (3) International Law**

A study of the legal norms and institutions which influence international and transnational relations. V

### **433 (3) International Organization**

Study of the function and process of the United Nations and other international organizations. S

### **434 (3) United States Foreign Policy**

This course is a general overview of US foreign policy institutions, processes, and politics. U.S. foreign policy is examined in historical, global and domestic contexts. V

### **435 (3) Capitalism, Nationalism and Democracy**

This course explores the interaction of the three complex contemporary political and socioeconomic phenomena: the continuing expansion of global capitalism, the rise of nationalism(s), and the new wave of democratization around the world. The following topics are covered and discussed in class, with references to specific country and regional examples, (1) the impact of international economic institutions and democratization, (2) new forms of political participation in emerging democracies, (3) cultural and ethnic determinants of democratization, (4) problems of economic inequality in new democracies, (5) social and gender issues of democratic transitions, and (6) the relationship between democratic expansion and world peace. Course format will be lecture, discussion, student presentations and occasional films.

**439 (3) Comparative Social Policy: The Welfare State in Europe and the Americas**

This course offers a cross-national perspective on the politics of social policy and the welfare state in industrialized parts of the world, including North and South America and different regions of Europe. It also explores distinct national patterns of public policy solutions to the common contemporary problems of social security, poverty, and health care by paying close attention to both domestic factors and the forces of globalization that work to constrain government decisions. This multidimensional approach is designed to enable students to better understand how politics work in different ways to produce collective or social choices.

**440 (1-4) Topic in Comparative Politics**

This course explores topics in comparative politics beyond what is covered in the existing curriculum. Students study specialized topics of current importance in the field. Specific topics will change depending on the term and instructor. May be retaken with a change of topic. V

**441 (3) Russia and Neighboring States Politics**

This course focuses on the Russian political system in relation to domestic social and economic environments and also on the role of Russia as a global actor. It examines the postcommunist transformation in Russia and other former Soviet republics. V

**442 (3) South Asia: Politics and Policy**

This course introduces students to the governments and politics of the South Asian countries. The historical and cultural context of politics are explored, as well as contemporary issues. V

**443 (3) Middle East Politics**

This class explores the dynamics that determine politics and effect change in the region. Using a comparative perspective for the major countries in the region, we examine such issues as Islam, nationalism, resources, regional conflicts, impact of the international system, and political development. F

**444 (3) Latin America Politics**

This course includes a detailed analysis of select countries and theoretical concerns in Latin American studies. Its general goal is to provide students with the knowledge of Latin American politics and societies in both regional and comparative contexts. V

**446 (3) African Politics**

This course is designed to acquaint undergraduate and graduate students with key concepts and issues in the study of African politics. The historical and cultural context of politics is explored, as well as topics of current importance in the field. S

**447 (3) Europe: Politics and Policy**

This course discusses government institutions, political developments, and policymaking structures of contemporary Europe, including the former communist countries of East/Central Europe and the Balkans. It will also cover the ongoing process of European integration

(European Union) and democratization of the former Soviet bloc countries. Some of the topics covered will include: elections, party systems, federalism and devolution, ethnic and minority policy, social policy, economic reforms, gender and politics, and cross-Atlantic relations with the US.

**448 (3) Political Development and Change**

This course introduces students to key issues and concepts in the study of political and economic development. Both theoretical approaches and empirical data are presented. The course is also designed to enhance students' analytical and research skills. F

**449 (3) Comparative Criminal Justice System**

A comparison of criminal justice philosophies, structures, and procedures found in various countries around the world. Same as LAWE 434 V

**450 (1-4) Topics in Public Law**

This course explores topics in public law beyond what is covered in the existing curriculum. Students study specialized topics of current importance in the field. Specific topics will change depending on the term and instructor. May be retaken with a change of topic. V

**451 (3) Administrative Law**

Legal procedures by which state and federal administrative agencies exercise legislative, judicial and executive powers. Emphasis is placed on the constitutional position of administrative agencies, the rule making process, the power of agencies to decide rights and obligations concerning individual cases, and judicial control of administrative action. F

**452 (3) Jurisprudence**

Philosophy and sources of law. Schools of legal philosophy and types of legal thinking. Emphasis is placed on Classical Natural Law, Analytical Legal Positivism, Legal Realism and Critical Legal Studies. Same as LAWE 435 F

**453 (3) Constitutional Law**

Review of selected U.S. Supreme Court decisions relating to the powers of the President, Congress and the Judiciary, as well as the division of power between the states and the federal government. Focus is on case briefing, underlying rationales, and the development of individual analytical abilities. V

**454 (3) Civil Liberties**

Review of selected U.S. Supreme Court decisions interpreting areas such as substantive due process, abortion, speech, press, religion, and equal protection. Focus is on the rationale which underlies decisions and the development of individual analytical abilities. Same as LAWE 436 V

**460 (1-4) Topics in Public Policy/Administration**

This course explores topics in public policy and public administration beyond what is covered in the existing curriculum. Students study specialized topics of current importance in the field. Specific topics will change

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## Political Science

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depending on the term and instructor. May be retaken with a change of topic. V

### **461 (3) Environmental Politics**

A study of the natural environment as a public policy issue in the political process of the United States, with some attention given to comparative and international perspectives. V

### **462 (3) Collective Bargaining: Public Sector**

A broadly based introduction to the issues, processes, and techniques of public sector labor relations. V

### **463 (3) Public Personnel Administration**

The development of public personnel management in federal, state and local governments; strategic planning and policy making, position management, staffing, performance management, workplace relations. F

### **464 (3) Aging: Policy Issues**

The public policy process and issues as related to the generations, particularly to older Americans. Focuses on the policy context as well as the specific policies and programs. S

### **470 (1-4) Topics in Institutions, Process**

This course explores topics in political institutions and process beyond what is covered in the existing curriculum. Students study specialized topics of current importance in the field. Specific topics will change depending on the term and instructor. May be retaken with a change of topic. V

### **472 (3) Urban Government**

Politics of cities and metropolitan areas. Impact of race, class, gender, immigrant status issues. Intergovernmental relations, how citizens can influence urban politics. V

### **473 (3) The Legislative Process**

United States Congress and state legislatures, with some cross-national comparisons. Legislative structure, powers; districting, elections, representation, constituency relations; committee system, parties, law-making process, rules and procedure, decision-making, relations with executives and courts. Reforms. S

### **474 (3) The Executive Process**

Examination of executive politics in United States at a federal and state level, with some cross-national comparisons. United States presidency and executive branch, governors and state executive branches, mayors, and other local executives. V

### **475 (3) The Judicial Process**

An examination of the structure, jurisdiction and processes of federal and state courts. Also studied are judicial decision-making, the selection of judges and justices. Same as LAWE 437. V

### **480 (1-4) Topics in Participation and Behavior**

This course explores topics in political participation and behavior beyond what is covered in the existing curriculum. Students study specialized topics of current importance in the field. Specific topics will change depending on the term and instructor. May be retaken with a change of topic. V

### **482 (3) Campaigns and Elections**

Elections in the United States at the federal, state and local levels. Election law, history, factors affecting elections, voting behavior, campaign finance, role of parties and groups, campaign strategy and tactics. Analysis of contemporary elections. F

### **483 (3) Political Parties**

Parties at United States, state, local level. Cross-national comparisons. Decline and revival of parties. What parties do. Is two party systems best? Are third parties the answer? Party organization. Voting behavior. Legislative, executive parties. Minnesota focus. S

### **484 (3) Women and Politics**

Politics impact on women: women's impact on politics and governance; primary focus on United States but some comparative considerations. V

### **485 (3) Terrorism and Political Violence**

History, philosophy, techniques and countermeasures to terroristic and low intensity threats to public order. Both domestic and international terror. The blurring of the lines between low intensity conflict/terrorism and multinational high intensity crime. Same as LAWE 438 V

### **486 (3) Racial and Ethnic Politics**

Racial and ethnic minorities in U.S. politics. Public opinion on racial issues, minority representation, race (partisanship and voting behavior), and racial issues (affirmative action, school busing, immigration). V

### **487 (3) Political Psychology**

Applications of psychological concepts to politics. Intergroup relations, stereotyping, political authoritarianism, presidential character and psychology, foreign policy decision-making, political tolerance, and mass violence and genocide. V

### **490 (1-6) Workshop**

Selected topics. May be repeated with change of topic. V

### **491 (1-12) Internship**

Field placement with a governmental agency or related organization. Provides a learning experience in which the student can integrate and apply knowledge and theory derived from curriculum. P/N only. V

### **492 (1-5) Individual Study**

Advanced study and research on topics not currently available in existing courses. May be repeated with a change of topic. Requires advisor and instructor approval of topic. V

### **493 (3) Individual Study: Social Studies Teaching**

This course provides individualized instruction for students preparing for social studies teaching with a concentration in political science. Students carry out research projects related to curriculum development and the teaching of social studies. V

## Pre-Professional Programs

### Pre-Professional Programs

The purpose of pre-professional programs is to provide students with the intellectual and academic backgrounds they will need before continuing their educations in degrees not offered at Minnesota State University, Mankato. Acceptance to professional educational institutions is contingent upon academic performance, so students enrolling in pre-professional programs should be highly motivated and realize they are expected to maintain standards of excellence. Advisors play an important role in guiding the students enrolled in such programs so students are urged to contact the advisor before enrolling.

#### PRE-AGRICULTURE

*College of Science, Engineering & Technology*

**Advisors:** Alison Mahoney, Ph.D.

*Specific course requirements may vary based on the university and program area within agriculture. Students should identify their transfer institution early, and consult with advisors at that university.*

#### Required for Program (56 credits):

BIOL	105	General Biology I (4)
BIOL	106	General Biology II (4)
BIOL	201	Ecology and Human Society (3)
CHEM	201	General Chemistry I (5)
CHEM	202	General Chemistry II (5)
CHEM	320	Organic Chemistry I (5)
CHEM	321	Organic Chemistry II (2)
ENG	101	Composition (4)
ENG	271	Technical Communication (4)
ENG	285	Practical Grammar (2)
MATH	112	College Algebra (4) <i>and</i>
MATH	113	Trigonometry (3) <i>or</i>
MATH	115	Precalculus Mathematics (4)
PHYS	211	Principles of Physics I (4)
PSYC	101	Psychology (4)
SPEE	102	Public Speaking (3)

#### PRE-CHIROPRACTIC

*College of Science, Engineering & Technology*

**Advisor:** Jim Rife

#### Required General Education (26 credits):

ENG	101	Composition (4)
PSYC	101	Psychology (4)
SPEE	102	Public Speaking (3)

An additional 15 elective credits from Humanities or Social Sciences

#### Recommended General Education (3 credits):

HLTH	321	Medical Terminology (3)
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#### Recommended Support Courses (7 credits):

MATH	112	College Algebra (4)*
MATH	113	Trigonometry (3)*

#### Required for Major (Core, 34 credits):

BIOL	105	General Biology I (4)
BIOL	106	General Biology II (4)
CHEM	201	General Chemistry I (5)
CHEM	202	General Chemistry II (5)

CHEM	320	Organic Chemistry I (5)
CHEM	321	Organic Chemistry II (2)
CHEM	331	Organic Chemistry II Lab (1)
PHYS	211	Principles of Physics I (4)
PHYS	212	Principles of Physics II (4)

#### Required Electives (20 credits):

A minimum of 90 hours are required to complete this program. The student should consult with the pre-chiropractic advisor in selecting the remaining 20 elective credits.

\*There are no requirements for mathematics in this program; however, the student needs adequate training in mathematics to take the courses in chemistry and physics.

This program meets the requirements for admission to the Northwestern College of Chiropractic in Bloomington Minn. Other colleges may have different requirements. Students in the pre-chiropractic program should regularly consult with the pre-chiropractic advisor.

#### PRE-DENTAL

*College of Science, Engineering & Technology*

**Advisory Team:** M. Bentley, Ph.D., J. Thoenke, Ph.D., E. Williams, Ph.D.

Specific course requirements for admission to dental school vary somewhat among the different dental schools in the United States. To be eligible for admission at a particular dental school, the student must fulfill the requirements of that school. Students are encouraged to keep themselves apprised of requirements for specific schools by consulting appropriate Web site. \* The following list of courses is consistent with the courses required for admission to the University of Minnesota Dental School.

**English:** ENG 101, SPEE 100 and an additional 4 credits of writing intensive course work in English, (students are encouraged to take ENG 271 and PHIL 222 as electives)

**Biology:** BIOL 105, 106 (students are encouraged to take additional electives from the following list to enhance their knowledge in basic biology: BIOL 211, 220, 230, 270, 316, 320, 435, 475)

**Physics:** PHYS 211 (4), 212 (4) or PHYS 221 (5), 222 (5)

**Chemistry:** CHEM 201 (5), 202 (5), 320 (5), 321 (2), 331 (1), CHEM 360 (3), (students are encouraged to take CHEM 305 as an elective).

**Mathematics:** MATH 112

**Psychology:** PSYC 101

Although a minimum of 87 semester credits are required for admission to the D.D.S. program at the University of Minnesota, most students enrolled have completed four or more years of college. To receive a baccalaureate degree from Minnesota State University, Mankato, the student must complete the requirements for general education, a major and possibly a minor. Dental schools look most favorably upon the academically well-rounded student who has a strong scholastic record and unique life experiences that engender a commitment to

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## Pre-Professional Programs

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a career in dentistry. Students should pursue majors and minors in subjects of their own choosing, as dental schools accept applicants from all academic majors, provided admission prerequisites are met. Majoring in one of the sciences—biology, biochemistry, chemistry, physics etc.—has the advantage of incorporating many or all of the courses listed above. Furthermore, the technical language of dental school is derived primarily from the disciplines of biology, chemistry, physics, mathematics and psychology. Sciences must include both lecture and laboratory instruction. Courses in biology, chemistry, and physics may be considered outdated by dental schools if taken more than five years before the time of application. Elective courses should be selected to achieve as broad and liberal an education as possible. Students who plan to enter dental school must take the Dental Admission Test (DAT). Typically, students begin the application process to dental school during the summer following their junior year. For their application to be complete, they must report their DAT scores.

### PRE-ENGINEERING

*College of Science, Engineering & Technology*

**Advisor:** Louis Schwartzkopf, Ph.D.

Choose one of the following options:

#### MSU OPTION

This option is open to students who will be entering the Engineering program at Minnesota State University, Mankato.

#### Required General Education (17 credits):

MATH 121 Calculus I (4)  
ENG 101 Composition (4)  
PHYS 221 General Physics I (5)  
CHEM 201 General Chemistry I (5)

#### Required Support Courses (11 credits):

MATH 122 Calculus II (4)  
SPEE 240 Legal Communication (3)  
COMS 171 Introduction to C++ Programming (2)  
EE 101 Introduction to Engineering I (1)  
ME 103 Introduction to Engineering III (1)

#### TRANSFER OPTION

This option is designed for students who plan to transfer from Minnesota State University, Mankato, after two years. Contact the pre-engineering advisor to obtain course listings for specific engineering fields at the University of Minnesota or other universities.

#### Required General Education (17 credits):

MATH 121 Calculus I (4)  
ENG 101 Composition (3)  
PHYS 221 General Physics I (5)  
CHEM 201 General Chemistry I (5)

#### Required Support Courses (35 credits):

MATH 122 Calculus II (4)  
MATH 223 Calculus III (4)  
MATH 247 Linear Algebra I (4)  
MATH 321 Ordinary Differential Equations (4)  
ENG 271 Technical Communication (4)

SPEE 240 Communicating Technically (3)  
PHYS 222 General Physics II (5)  
CHEM 202 General Chemistry II (5)  
COMS 171 Introduction to C++ Programming (2)

#### Required Core (8 credits):

EE 101 Introduction to Engineering I (1)  
ME 103 Introduction to Engineering III (1)  
ME 212 Statics (3)  
ME 214 Dynamics (3)

### PRE-FORESTRY

*College of Science, Engineering & Technology*

**Advisors:** Alison Mahoney, Ph.D.

#### First Year

BIOL 105 General Biology I (4)  
BIOL 106 General Biology II (4)  
CHEM 201 General Chemistry I (5)  
CHEM 202 General Chemistry II (5)  
ENG 101 Composition (4)  
MATH 112 College Algebra (4)  
MATH 113 Trigonometry (3)

#### Second Year

CHEM 320 Organic Chemistry I (5)  
CHEM 321 Organic Chemistry II (2)  
PHYS 211 Principles of Physics I (4)  
PHYS 212 Principles of Physics II (4)  
PSYC 101 Psychology (4)  
SPEE 102 Public Speaking (3)

### PRE-LAW

**Advisor:** Doran Hunter, Ph.D.

A student's grade-point average and score on the Law School Admission Test are the primary factors on which law schools base their admission decisions. Law schools generally do not require a particular major field or any particular prescribed courses as prerequisites for admission. Most law schools merely require a bachelor's degree.

Students should select a major field which interests them and which will provide them with a basis for an alternative vocational choice should their plans to finish law school not be realized. Even though no particular pre-law major is best for all students, there must be substantial academic content in the pre-law education. In addition, students should supplement their major field by taking intellectually demanding courses that will develop broad educational foundations and mental skills required of the successful law student or lawyer: the ability to analyze, reason, read carefully, think abstractly, and speak and write precisely. Elective courses might include accounting, statistics, corporate finance, constitutional law and history, jurisprudence, logic, political theory, and at least one course in English composition beyond the freshman level.

Students should contact the pre-law advisor for more detailed assistance on the manner in which their particular needs and interests may best be shaped into a suitable pre-law program.



## Pre-Professional Programs

The Pre-Law Association, a student-sponsored organization, is available for the purpose of encouraging communication and interaction among pre-law students on campus.

### PRE-MEDICINE

*College of Science, Engineering & Technology*

**Advisory Team:** M. Bentley, Ph.D., J. Thoenke, Ph.D., E. Williams, Ph.D.

Specific course requirements for admission to medical school vary somewhat among the different medical schools in the United States. To be eligible for admission at a particular medical school, the student must fulfill the requirements of that school. Students are encouraged to keep themselves informed of requirements for specific schools by consulting appropriate web sites. The University of Minnesota (Twin Cities) requirements and the Minnesota State course offering are as follows:

#### **General Biology or Zoology with laboratory (7 credits minimum):**

BIOL 105(4) and BIOL 106 (4)

Students are encouraged to take additional electives from the following list to enhance their knowledge in basic biology:

BIOL 211, 220, 230, 270, 316, 320, 435, 474

#### **Chemistry with laboratory (general, inorganic and organic chemistry, 14 credits minimum):**

General chemistry: CHEM 201 (5), CHEM 202 (5)

Organic chemistry: CHEM 320 (5), CHEM 321 (2), CHEM 331 (1)

Biochemistry: CHEM 360 (3)

Students are encouraged to take CHEM 305 as an elective.

#### **Physics with laboratory (8 credits minimum):**

PHYS 211 (4) and PHYS 212 (4)

or

PHYS 221 (5) and PHYS 222 (5)

#### **Mathematics (introductory course in calculus or upper level statistics):**

MATH 121 (4) or MATH 354 (3), HLTH 475

#### **English or literature (one year):**

ENG 101 (4), and an additional 4 credits of writing intensive coursework in English.

Students are encouraged to take ENG 271 as an elective.

#### **Social and Behavior Sciences and Humanities (18 credits minimum):**

Students are encouraged to include PSYC 101 and PHIL 222 among these electives.

The completion of a baccalaureate degree is required for admittance to a medical school in most cases. Medical schools look most favorably upon the academically well-rounded student who has a strong scholastic record and unique life experiences that engender a commitment to a career in medicine. Students should pursue majors in subjects of their own choosing, as medical schools accept applicants from all academic majors, provided admission prerequisites are met. Majoring in one of the sciences—biology, biochemistry, chemistry, physics,

etc.,—has the advantage of incorporating many or all of the courses listed above. Furthermore, the technical language of medical science is derived primarily from the disciplines of biology, chemistry, physics, mathematics, and psychology. Students who plan to enter medical school must take the Medical College Admission Test (MCAT). Typically, students begin the application process to medical school during the summer following their junior year. For their application to be complete, they must report their MCAT scores. MCATs are offered during April and August. If you have questions, please contact your pre-medicine advisor.

### PRE-MORTUARY SCIENCE

*College of Science, Engineering & Technology*

**Advisor:** Marie Pomije, Ph.D.

#### **Required for Program:**

ACCT	110	Accounting for Non-Business Majors (3)
BIOL	105	General Biology I (4)
BIOL	220	Human Anatomy (4)
BIOL	270	Microbiology (4)
CHEM	201	General Chemistry I (5)
COMS	100	Introduction to Computer Science (4)
ECON	202	Principles of Microeconomics (3)
ENG	101	English Composition (4)
HIST	150	Historical Perspectives (3)
MATH	112	College Algebra (4)
PSYC	101	Psychology (4)
SOC	101	Introduction to Sociology (3)
SPEE	102	Public Speaking (3)

Additional electives to meet the 60 credit transfer requirement.

This program has been designed to meet the transfer requirements of the University of Minnesota's Mortuary Science Program. Students should note that the University of Minnesota changed program requirements in the 2001-2002 academic year. The transfer program requires a total of 60 semester credits completed while maintaining a minimum GPA of 2.5 on a 4.0 scale. The courses listed above are specified by the University of Minnesota; additional courses should be selected with the help of an advisor.

The American Board of Funeral Service Education (ABFSE) accredits Mortuary Science Programs throughout the United States. Accredited programs are found on their Web site: [www.abfse.org](http://www.abfse.org). Students interested in Mortuary Science are strongly encouraged to consult the Web site to locate programs in their geographic area of interest and then to consult with an advisor at that institution in their freshman year.

### PRE-OCCUPATIONAL THERAPY

**Advisor:** Mark Schuck

This pre-professional program encompasses the prerequisite courses needed to apply to most professional occupational therapy programs. These programs may accept students after their sophomore or junior year, or after obtaining a bachelor's degree in any area as long as all the listed prerequisite courses are completed.

## Pre-Professional Programs

### Recommended Courses:

ENG	101	Composition (4)
SPEE	100	Fundamentals of Speech Communication (3)
BIOL	100	Our Natural World (4)
BIOL	220	Human Anatomy (4)
BIOL	230	Human Physiology (4)
PHYS	211	Principles of Physics I (4)
PHYS	212	Principles of Physics II (4)
MATH	112	College Algebra (4)
STAT	154	Elementary Statistics (3)
HLTH	101	Health and the Environment (3)
HLTH	210	First Aid and CPR (3)
HLTH	321	Medical Terminology (3)
SOC	101	Introduction to Sociology (3)
TECH	180	Technology and You (3)
PSYC	101	Psychology (4)
PSYC	433	Child Psychology (4) <b>or</b>
PSYC	436	Adolescent Psychology (4)
PSYC	455	Abnormal Psychology (3)
ART	230	Fibers (3)
ART	231	Multi-Media Art Exploration (3)
ART	330	Fibers (3)
Choose one of the following:		
CHEM	100	Chemistry in Society (4)
CHEM	105	Introduction to Chemistry (3)

### PRE-OPTOMETRY

*College of Science, Engineering & Technology*  
**Advisor:** Mike Lusch, Ph.D.

The following prerequisite courses satisfy most colleges and schools of optometry. By the end of their first year at Minnesota State University, Mankato, however, students should check the specific requirements of the college or school of optometry they plan to attend to ascertain exactly what is required for admission. A third year or a bachelor's degree may be needed to be admitted to some colleges.

#### First Year

BIOL	220	Human Anatomy (4)
BIOL	230	Human Physiology (4)
CHEM	201	General Chemistry I (5)
CHEM	202	General Chemistry II (5)
ENG	101	Composition (4)
MATH	112	College Algebra (4)
MATH	113	Trigonometry (3)
MATH	121	Calculus I (4)

#### Second Year

BIOL	270	Microbiology (4)
CHEM	320	Organic Chemistry I (5)
CHEM	360	Principles of Biochemistry (4)
PHYS	211	Principles of Physics I (4)
PHYS	212	Principles of Physics II (4)
PSYC	101	Psychology (4)
STAT	154	Elementary Statistics (3)
ENG	271	Technical Communication (4)

#### Third Year

ECON	100	An Introduction to the U.S. Economy (3)
HIST	150	Any topic (3)
POL	100	Introduction to Politics (3)

### PRE-OSTEOPATHIC MEDICINE AND SURGERY

*College of Science, Engineering & Technology*  
**Advisor:** Jim Rife

#### Required General Education (7 credits):

ENG	101	Composition (4)
SPEE	102	Public Speaking (3)

#### Recommended Support Courses (7 credits):\*

MATH	112	College Algebra (4)
MATH	113	Trigonometry (3)

#### Required for Major (34 credits):

BIOL	105	General Biology I (4)
BIOL	106	General Biology II (4)
CHEM	201	General Chemistry I (5)
CHEM	202	General Chemistry II (5)
CHEM	320	Organic Chemistry I (5)
CHEM	321	Organic Chemistry II (2)
CHEM	331	Organic Chemistry II Lab (1)
PHYS	211	Principles of Physics I (4)
PHYS	212	Principles of Physics II (4)

#### Required Electives (42 credits):

Electives to yield a total of 90 semester credits are required.

\* There are no requirements for MATH in this program; however, the student needs adequate training in math to take courses in chemistry and physics. Colleges of osteopathic medicine and surgery require a minimum of 90 semester hours for admission. Most students admitted to a college of osteopathic medicine and surgery have completed undergraduate degrees. A few exceptional students are admitted after three years as an undergraduate. Students interested in osteopathic medicine will find that majoring in Human Biology (B.S.), Physiology (B.S.) or Biochemistry (B.A.) will provide them with adequate undergraduate training. The Medical College Admissions Test is required for all applicants to colleges of osteopathic medicine and surgery. Students in this program should regularly consult with the advisor.

### PRE-PHARMACY

*College of Science, Engineering & Technology*  
**Advisor:** Marie Pomije, Ph.D., Terry Salerno, Ph.D.

#### Required for Program:

BIOL	105	General Biology I (4)
BIOL	220	Human Anatomy (4)
BIOL	270	Microbiology (4)
CHEM	201	General Chemistry I (5)
CHEM	202	General Chemistry II (5)
CHEM	320	Organic Chemistry I (5)
CHEM	321	Organic Chemistry II (2)
CHEM	331	Organic Chemistry II Lab (1)
ECON	202	Principles of Microeconomics (3)
ENG	101	Composition (4)
ENG	xxx	Literature Course Elective (3)
HIST	xxx	History elective (3)
HUM	xxx	Humanities elective (3)
MATH	121	Calculus I (4)
PHYS	211	Principles of Physics I (4)
PHYS	212	Principles of Physics II (4)
PSYC	101	Psychology (4)
SPEE	102	Public Speaking (3)

## Pre-Professional Programs

Sixty to 64 credits of coursework including the above are typically required by pharmacy programs. Substitutions for both science and non-science courses should be chosen after studying the requirements of particular pharmacy schools. Please contact a pre-pharmacy advisor.

### PRE-PHYSICAL THERAPY

**Advisor:** Mark Schuck

The pre-Physical Therapy curriculum is primarily a science-oriented curriculum which would meet the requirements for admission to most schools of physical therapy. Most physical therapy schools now require a bachelor's degree prior to application for admission, although a few still accept students following two or three years of college preparation.

#### Recommended Courses:

BIOL	105	General Biology I (4)
BIOL	106	General Biology II (4)
BIOL	220	Human Anatomy (4)
BIOL	230	Human Physiology (4)
PHYS	211	Principles of Physics I (4)
PHYS	212	Principles of Physics II (4)
MATH	112	College Algebra (4)
MATH	113	Trigonometry (3)
STAT	154	Elementary Statistics (3)
CHEM	201	General Chemistry I (5)
CHEM	202	General Chemistry II (5)
SPEE	100	Fundamentals of Speech Communication (3)
HP	265	Orientation to Occupational and Physical Therapy (1)
ENG	101	Composition (4)
PSYC	101	Psychology (4)
PSYC	433	Child Psychology (4) <b>or</b>
PSYC	436	Adolescent Psychology (4)
PSYC	455	Abnormal Psychology (3)
HLTH	101	Health and the Environment (3)
HLTH	210	First Aid and CPR (3)
HLTH	321	Medical Terminology (3)
COMS	100	Introduction to Computer Science (4)
MATH	121	Calculus I (4)

### PRE-PODIATRIC MEDICINE AND SURGERY

*College of Science, Engineering & Technology*

**Advisor:** Jim Rife

The minimum requirements for admission to a college of podiatric medicine and surgery are the same as for osteopathic medicine and surgery. A minimum of 90 semester hours are required for admission; however, most students admitted to a college of podiatric medicine and surgery have completed undergraduate degrees. Students interested in podiatric medicine will find that majoring in Human Biology (B.S.), Physiology (B.S.) or Biochemistry (B.A.) will provide them with adequate undergraduate training. The Medical College Admissions Test is required for all applicants to colleges of podiatric medicine and surgery. Students in this program should regularly consult with the advisor.

#### Required General Education (7 credits):

ENG	101	Composition (4)
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SPEE	102	Public Speaking (3)
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#### Recommended Support Courses (7 credits):\*

MATH	112	College Algebra (4)
MATH	113	Trigonometry (3)

#### Required for Major (34 credits):

BIOL	105	General Biology I (4)
BIOL	106	General Biology II (4)
CHEM	201	General Chemistry I (5)
CHEM	202	General Chemistry II (5)
CHEM	320	Organic Chemistry I (5)
CHEM	321	Organic Chemistry II (2)
CHEM	331	Organic Chemistry II Lab (1)
PHYS	211	Principles of Physics I (4)
PHYS	212	Principles of Physics II (4)

#### Required Electives (42 credits):

Electives to yield a total of 90 semester credits are required.

\* There are no requirements for MATH in this program; however, the student needs adequate training in math to take courses in chemistry and physics.

### PRE-THEOLOGY

*College of Arts & Humanities*

**Advisor:** Carrie Williams

College courses prior to theological seminary should provide the cultural and intellectual foundations essential to an effective theological education. The emphasis should be on a four-year liberal arts degree program.

The following is regarded by the American Association of Theological Schools as a minimum list of fields with which it is desirable that a student have acquaintance before beginning study in a seminary. Many of these courses will be included in the general education requirements at Minnesota State University, Mankato.

English: literature, composition, speech and related studies. At least four courses.

History: ancient, modern, European and American. At least two courses.

Philosophy: At least two courses.

Natural Science: physics, chemistry, biology. At least one course.

Social Science: psychology, sociology, economics, political science and education. At least four courses including at least one course in psychology.

Foreign Language: one or more of the following: Latin, Greek, Hebrew, German, French (cooperative programs available in Greek and Hebrew). At least two years.

Religion: At least two courses.

Of the various areas, English, philosophy and history are regarded as the most desirable as areas of concentration.

Because of the general nature of this program, students are encouraged to have close contact with a faculty advisor and the seminary that they are considering attending.

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## Pre-Professional Programs

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### PRE-VETERINARY MEDICINE

*College of Science, Engineering & Technology*

**Advisors:** P. Knoblich D.V.M., Ph.D.

Specific course requirements for admission to veterinary schools vary somewhat. The following requirements are designed to fit an application to the University of Minnesota Veterinary School. Students should use these requirements as a general guide and look up specific requirements for other Veterinary Schools.

#### Required for Major (Core, 62-69 credits):

ENG 101 Composition (4)  
BIOL 105 General Biology I (4)  
BIOL 106 General Biology II (4)  
BIOL 211 Genetics (3)  
BIOL 270 Microbiology (4)  
CHEM 201 General Chemistry I (5)  
CHEM 202 General Chemistry II (5)  
CHEM 320 Organic Chemistry I (5)  
CHEM 360 Principles of Biochemistry (4)  
PHYS 211 Principles of Physics I (4)  
PHYS 212 Principles of Physics II (4)

Choose one of the following options:

MATH 112 College Algebra (4) **and**  
MATH 113 Trigonometry (3) **or**  
MATH 115 Pre-calculus (4) **or**  
MATH 121 Calculus I (4)

#### Required Electives (12-16 credits):

2 History and Social Sciences (6-8 credits)  
2 Arts and Humanities (6-8 credits)

**Graduate Record Exam must be taken.**

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## Psychology

*College of Social & Behavioral Sciences*

*Department of Psychology*

23 Armstrong Hall • 507-389-2724

Web site: [www.mnsu.edu/dept/psych/psych.html](http://www.mnsu.edu/dept/psych/psych.html)

Chair: Rosemary Krawczyk

Paul K. Brandon, Michael Fatis, Nancy Fenrick, Phillip Goernert, Kenneth J. Good, Daniel Houlihan, Edison Perdomo, Lisa Perez, Barry J. Ries, D. C. Royal, Daniel Sachau, Seiji Takaku, Douglas J. Wallen, Robert Widner

Psychology is the scientific study of the effects of individual, social, physiological, developmental and environmental factors on thoughts, feelings and behavior. Psychology courses seek to teach students about the methods of psychological inquiry and the findings of psychological research.

Students study psychology because they wish to prepare for a professional career as a psychologist, because they are planning a career in which the understanding of human behavior is important, or simply because they wish to develop a greater understanding of themselves and others. The practice of psychology at the professional level requires a graduate degree beyond the bachelor's degree.

**Admission to Major** is granted by the department.

Department admissions requirements are:

- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.50 (C).
- completion of PSYC 201 (Statistics) with a grade of "C" or better.

Contact the department for application procedures.

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### PSYCHOLOGY BA, BS

#### Required General Education:

PSYC 101 Psychology (4)

#### Required for Major:

PSYC 201 Statistics for Psychology (4)

PSYC 409 History of Psychology (3)

#### Required Restricted Electives (23-24 credits):

Choose one of the following:

PSYC 207 Introduction to Behavior Analysis (4)

PSYC 211 Experimental Psychology (4)

Choose two of the following:

PSYC 404 Memory and Cognition (4)

PSYC 407 Advanced Behavior Analysis (4)

PSYC 413 Sensation and Perception (4)

PSYC 421 Biopsychology (4)

Choose three of the following:

PSYC 340 Social Psychology (4)

PSYC 419 Psychometric Theory (4)

PSYC 433 Child Psychology (4)

PSYC 436 Adolescent Psychology (4)

PSYC 455 Abnormal Psychology (4)

PSYC 456 Personality (3)

#### Required Electives (5-7 credits):

PSYC xxx PSYC xxx

#### Required for Bachelor of Arts (BA) degree ONLY:

Language (8)

**Required Minor: Yes. Any.**

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### PSYCHOLOGY MINOR

#### Required for Minor (General Education):

PSYC 101 Psychology (4)

Choose 17 credits of electives, including at least 8 credits at the 400 level.

PSYC Elective

PSYC Elective

PSYC Elective

PSYC 400 Level Elective

PSYC 400 Level Elective

PSYC 400 Level Elective

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### POLICIES/INFORMATION

**GPA Policy.** Any Psychology course in which a grade of less than C (or P) is earned will not be counted toward a major or a minor in psychology.

**P/N Grading Policy.** No more than 8 credits of the major or 4 credits of the minor may be taken for P/N credit. PSYC 291 is only available on a P/N basis. PSYC 497 and PSYC 499 are also normally taken for P/N credit.

**Teaching Psychology.** Students who intend to gain initial licensure to teach psychology in Minnesota schools need to meet the requirements of the social studies B.S. (teaching) program as described in the social studies section of this bulletin.

## COURSE DESCRIPTIONS

### 101 (4) Psychology

This course is designed to provide a thorough introduction to the broad spectrum of theories and applications that make up the field of psychology F, S

### 201 (4) Statistics For Psychology

This course emphasizes understanding the conceptual basis of common statistical procedures and applying those procedures to the problems of organizing information and making inferences from data. Topics include: summarizing data, the logic of inference, estimation, analysis of variance, and correlation. Pre: MATH 112 F, S

### 202 (1) Careers In Psychology

Exploration of career opportunities in the helping professions. F, S

### 206 (4) The Human Mind

An overview of psychology from the cognitive perspective. What we know about the mental processes that underlie human activities and how we study them. S

### 207 (4) Introduction to Behavior Analysis

This is a unit/mastery and laboratory course designed to introduce the student to the science of behavior analysis: the study of how behavior is influenced by its interactions with environmental events. The subject matter will be illustrated by human and animal experiments. F, S

### 211 (4) Experimental Psychology

An introduction to the major components of internally valid investigations. How to use computers in psychological research is explored. Pre: PSYC 201 F, S

### 230 (3) Child Care Psychology

This course is designed to develop an understanding of major variables that impact the psychological development of children. Emphasis will be placed on what parents and other care givers can do to maximize the healthy psychological development of their children. F, S

### 240 (3) Personal Adjustment

Understanding oneself and increasing one's satisfaction in living. F, S

### 291 (1-4) Tutoring Psychology

Application of the principles of learning to the instruction of students. Pre: PSYC 101, or consent F, S

### 303 (2) Introduction To Professional Psychology

This course is designed for psychology majors who plan careers in professional psychology (clinical, school, etc.). The purpose of the course is to assist students in developing the skills necessary to compete for graduate school placement. It is advised that students complete

this course during their sophomore or junior year. Pre: PSYC Major and 3.0 GPA F, S

### 340 (4) Social Psychology

An exploration of theories and research related to the ways that the social environment affects people's behavior. Pre: PSYC 101 F, S

### 390 (2) Research Seminar I

Application of principles and methods of research design to development of individual student research projects. Pre: PSYC 101, 201, 207 or 211 F

### 391 (2) Research Seminar II

This course is designed for students who are carrying out independent research designed in Research Seminar I. Focus on gathering data, data analysis, and compilation of research report. Pre: PSYC 390 S

### 404 (4) Memory and Cognition

A survey of the research and theories describing how humans perceive, elaborate, store, recover and use information. Emphasis is placed on understanding and evaluating the experimental strategies used to gather data about human mental processes. Pre: PSYC 201 and 207 or 211 S

### 405 (4) Motivation

Major concepts of human motivation and emotion, presentation of learned cognitive and biological influences on sustained behavior. Pre: PSYC 201, 207 or 211, or consent V

### 407 (4) Advanced Behavior Analysis

The science and technology of Behavior Analysis. The application of the principles of operant and respondent conditioning to the understanding and modification of human behavior. The primary mode of instruction is unit/mastery based on the text. There will also be a lab component involving human and animal experiments. Pre: PSYC 207 F, S

### 409 (3) History Of Psychology

Examination of the historical origins of the principal contemporary psychological theories. Pre: Two of PSYC 404, 407, 413, or 421 Senior Status Recommended F, S

### 413 (4) Sensation and Perception

How the senses respond to environmental stimuli and how the information they provide is organized into meaningful patterns that make up our experience of the physical world. The effects of maturation and learning in altering those patterns as also considered. Pre: PSYC 101, 201, 207 or 211 F

### 419 (4) Psychometric Theory

An overview of development, use, and validation of psychological tests. Topics include reliability and validity, test construction, item analysis, ethics, test administration and scoring, and computerized testing. Pre: PSYC 201 F

### 420 (4) Drugs and Behavior

Drug and alcohol use and abuse including history, biology, psychology, sociology, and clinical treatment and pre-



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## Pre-Professional Programs

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vention of abuse.

Pre: PSYC 421 S

### 421 (4) Biopsychology

Biological basis of psychological processes and behavior. Basic topics such as neuroanatomy and neuron function are presented as well as more general ones such as sensation and movement, sleep, memory and learning, schizophrenia and depression.

Pre: PSYC 201, and either 207 or 211 F, S

### 422 (4) Neuropsychology

Detailed analysis of the relationship between human behavior and brain function. Basic topics will include cerebral asymmetry, memory, language, and attention as well as behavioral deficits such as learning disabilities, psychiatric disorders, and disconnection syndromes associated with neurological abnormalities.

Pre: PSYC 421 V

### 429 (3) Drug Dependence

Examination of psychological theories relevant to the prevention and treatment of drug abuse.

Pre: PSYC 101 F

### 433 (4) Child Psychology

Physical, social, emotional, intellectual, and personality development from conception to preadolescence. Focus on interplay between maturation and experience.

Pre: 8 PSYC credits F, S

### 436 (4) Adolescent Psychology

This class covers the development of the individual from the age of 11 to 19 years of age. Discussion will include aspects of both normal and abnormal development.

F, S

### 437 (3) Youth And Sports

Psychological impact of sports on youthful participants.

V

### 438 (3) Community Psychology

The application of psychological principles to the assessment, analysis, intervention, and prevention of social problems. Research from an applied behavior analysis perspective will be emphasized.

Pre: 3 PSYC courses V

### 441 (3) Attitudes

Examining cultural, social, and individual influences on attitude development and change through lectures and discussions of theories and findings, and through experiential activities.

Pre: PSYC 101 V

### 442 (3) Group Psychology

Exploring factors affecting leadership and effective group processes through lectures and discussion of theories and findings and through experiential activities.

Pre: PSYC 101 S

### 443 (3) Advanced Social Psychology

An in-depth examination of social psychological research in laboratory and field settings.

Pre: PSYC 201, 211, and 340 ALT

### 448 (3) International Behavior

Images of foreign nations, cultures, people, and products in travel and cross-national contact. Effects of events, crises, news reporting, education persuasion,

foreign policy decision-making, and strategies of international conflict resolution.

Pre: 8 PSYC credits F

### 450 (3) Aviation Psychology

Human factors issues such as workload, automation, fatigue, display format, and communication issues in the aviation environment.

V

### 451 (3) Methods Of Enhancing Performance

The role of psychological factors in performance and psychological methods of performance enhancement. Factors examined will include attention, motivation, decision making, mental rehearsal, arousal, and self management.

Pre: 8 PSYC credits F

### 452 (3) Individual Differences

The nature, extent, and origins of mental, physical, and psychological differences among individuals.

Pre: PSYC 201 V

### 453 (3) Human Factors

The person-machine system; the strengths, operating limits, and tendencies of its human component.

Pre: PSYC 201 and 211 or 217 F

### 455 (4) Abnormal Psychology

This course is designed to increase the student's awareness and understanding of abnormal psychology. Students will become familiar with clinical descriptions, course of onset, and treatment regimens specific to various disorders.

Pre: 8 PSYC credits F, S

### 456 (3) Personality

Major theories of normal personality formation, organization, and structure.

Pre: 8 PSYC credits F, S

### 457 (3) Cross Cultural Psychology

Subjective culture effects on communication, culture contact, interactions in socialization, education, workplace, travel, gender, and family.

Pre: 8 PSYC credits F

### 460 (3) Psychology Of Women

Psychological study of women in historical and functional perspective. Role of hereditary, physiological, and socialization variables on women's thinking, feelings, and behavior.

Pre: PSYC 101 S

### 461 (3) Marketing Psychology

Analysis of product marketing and consumer purchasing strategies and their determinants.

Pre: 8 PSYC credits F

### 462 (3) Management Psychology

Managerial behavior, problems, and effects in planning, problem-solving, decision-making, supervision, leadership, conflict, communication, appraisal, motivation, training, and information systems in organizational environments.

Pre: 8 PSYC credits V

### 463 (4) Survey Of Industrial/Organizational Psychology

An examination of the psychological aspects of human

## Recreation, Parks & Leisure Services

behavior in the work place. Topics include history of Industrial/Organizational psychology, job analysis, performance measurement, predictors of performance, making personnel decisions, training, satisfaction, social perception, motivation, communication, group process, leadership, and organizational culture.  
Pre: PSYC 201, 207 or 211 F

### 464 (3) Environmental Psychology

Exploring environmental influences on group and individual perceptions, cognition, attitudes and behaviors through lectures and discussion of theories and findings and through experiential activities. ALT

### 465 (2) Psychology of Religion

Psychological processes underlying religious behavior. Religious development, concepts, common to religion and psychology such as belief, guilt, altruism, conscience, self-actualization. V

### 466 (3) Psychology of Aging

Aging process and development during the adult years; psychology and psychological concerns of the aging individual; dealing with death.  
Pre: PSYC 101 S

### 473 (3) Teaching of Psychology

Methods of teaching psychology.  
Pre: PSYC 101 V

### 476 (3) Behavior Therapy

Principles and procedures of behavior therapy in clinical areas. Emphasis is placed on procedures for developing more appropriate behaviors through positive and negative reinforcement, modeling, and cognitive procedures. Decreasing problematic behaviors through decelerating consequences and exposure techniques is also presented.  
Pre: PSYC 207 or 211 V

### 478 (4) Behavioral Medicine

The interface of behavioral and medical science is explored. Research on environmental and learning factors in the etiology and treatment of physical disease and rehabilitation is examined. Specific topics include pain management, medical compliance, behavior disorders in nursing homes and on chronic illnesses.  
Pre: Three courses in PSYC V

### 489 (1-5) Advanced Topics

Application of psychology to topics of current interest. May be retaken for credit. V

### 490 (1-3) Workshop

Topics to be announced. May be retaken for credit.  
F, S

### 491 (1) In-Service: Issues in Behavior Therapy

Current issues in Behavior Therapy are addressed. Students participate in off-campus didactic activities such as attendance at grand rounds at local hospitals, attendance at national, regional or local professional conferences, and augment learning with library research. Topics vary and students may repeat for credit.  
Pre: Consent. Academic and experience in human services strongly recommended. F, S

### 497 (1-8) Field Experience

A learning experience integrated with the student's course of study, to be developed with an advisor and the field experience coordinator. May be retaken for credit up to an 8 credit total for all enrollments. Available for P/N grading only.  
Pre: 9 credits of PSYC F, S

### 499 (1-4) Individual Study

Individualized learning under faculty supervision  
F, S

## Recreation, Parks & Leisure Services

*College of Allied Health & Nursing*

*Department of Recreation, Parks And Leisure Services*  
213 Highland North • 507-389-2127

Web site: [www.mnsu.edu/dept/RPLS/](http://www.mnsu.edu/dept/RPLS/)

Chair: James Petersen

Joy Joyner, Ronald Nickerson, Tracie Welton, James Wise

This program prepares a graduate to become a professional leader, supervisor and/or administrator within the private for profit, private non-profit, and the public sector of the recreation and leisure services field. The program includes preparation for youth programs, community education, municipal and leisure service programs; a broad variety of therapeutic recreation settings including hospitals, long-term care, advocacy organizations, consultant services; a wide variety of commercial recreation and tourism settings, nature and historical interpretation; private and public park systems including park ranger, research, educational outreach, planning marketing, park operations; and military recreation.

The Department offers a professional core that is accredited by the NRPA/AALR with three career tracks: Leisure Planning and Management, Therapeutic Recreation, and Resource Management.

**Admission to Major** is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures. In addition, a GPA of 2.4 in the first 12 hours of the program must be attained.

**Graduation Requirements:** COMS 100 intro to Computer Science (4)

### RECREATION, PARKS & LEISURE SERVICES BS Required for Major (Core, 36 credits):

- |      |     |   |
|------|-----|---|
| RPLS | 272 | Introduction to Recreation, Parks, and Leisure Services (3)     |
| RPLS | 277 | Recreation Leadership (3)                                       |
| RPLS | 278 | Leisure and Lifestyle (3)                                       |
| RPLS | 376 | Program Planning in Recreation, Parks, and Leisure Services (3) |
| RPLS | 377 | Public Relations (3)  |

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## Recreation, Parks & Leisure Services

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- RPLS 379 Management of Parks & Recreation Facilities (3)  
RPLS 471 Research Design in Recreation, Parks, and Leisure Services (3)  
RPLS 473 Administration of Leisure Time Programs (3)  
RPLS 483 Legal Processes in Recreation, Parks & Leisure Services (3)  
RPLS 484 Field Experience (1)  
RPLS 495 Practicum (8)

### **Required for Major (Career Tracks, 18 credits):**

Choose one of the following areas:

#### **LEISURE PLANNING AND MANAGEMENT OPTION**

- RPLS 325 Programming for Outdoor Settings (3)  
RPLS 465 Event Management (3)  
RPLS 475 Public Land Use Policy (3)  
Choose 3 courses from the following:  
RPLS 476 Recreation Vehicular Safety (3)  
RPLS 477 Commercial Recreation and Tourism (3)  
RPLS 481 Park Systems and Planning (3)  
RPLS 482 Leisure Needs of the Aging (3)

#### **THERAPEUTIC RECREATION OPTION**

- RPLS 274 Therapeutic Recreation Service (3)  
RPLS 447 Programming in Therapeutic Recreation (3)  
RPLS 450 Therapeutic Recreation Techniques (3)  
RPLS 482 Leisure Needs of the Aging (3)  
RPLS 489 Seminar: Clinical Aspects of Therapeutic Recreation (3)  
KSP 235 Human Development (3)

### **REQUIRED COURSES FOR NATIONAL CERTIFICATION IN THERAPEUTIC RECREATION:**

- PSYC 455 Abnormal Psychology (4)  
BIOL 220 Human Anatomy (4)

#### **RESOURCE MANAGEMENT OPTION:**

- RPLS 282 Wildlife as a Recreation Resource (3)  
RPLS 370 Review of Outdoor Recreation Research (3)  
RPLS 475 Public Land Use Policy (3)  
RPLS 476 Recreation Vehicular Safety (3)  
RPLS 477 Commercial Recreation & Tourism (3)  
RPLS 481 Park Systems and Planning (3)  
GEOG 373 Introductory Geographic Information Systems (4) Pre-Req. for RPLS 481

### **Required for Major (Practicum):**

Each student must complete the practicum requirement. Students who are graduating on a catalog prior to the 2001-2002 catalog must enroll in RPLS 487 and RPLS 488 after completing all course work and the Professional Experience Plan. Students who are graduating on the 2001-2002 or more recent catalog are required to enroll in RPLS 495 (8 credits) after completing all course work and RPLS 484. The student must file a practicum application with his/her advisor one semester prior to enrollment in the Practicum. The RPLS faculty advisor must approve the application prior to registration.

**Required Minor: None. But a minor is recommended.**

### **RECREATION MINOR**

#### **Required for Minor (12 credits):**

- RPLS 272 Introduction to Recreation, Parks, and Leisure Services (3)  
RPLS 376 Program Planning in Recreation, Parks and Leisure Services (3)  
RPLS 377 Public Relations (3)  
RPLS 473 Administration of Leisure Time Programs (3)

#### **Required for Minor (Electives, 9 credits):**

Choose 9 credits of electives from one of the option areas:

- RPLS xxx Leisure Planning & Management  
RPLS xxx Therapeutic Recreation  
RPLS xxx Resource Management

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### **POLICIES/INFORMATION**

**GPA Policy.** A 2.5 GPA in the major and completion of the field experience are required before enrolling in the practicum along with personal characteristics that, in the joint professional judgment of program faculty, are conducive to successful professionals in recreation and leisure settings. These include reliability, completion of individual and group assignments on time, consistency of performance, coping with ordinary personal problems, creativity, assertiveness, ethical performance, and a questioning, constructive, critical approach to new ideas. Evaluation of academic work, attitudes and personality must be considered by faculty to assure success in the recreation, parks and leisure services field.

**P/N Grading Policy.** Recreation, parks and leisure services majors and minors must take required courses for a letter grade with the exception that practicum courses must be taken on a P/N basis. Non-majors may elect RPLS courses for pass/no credit where this option is available. A student who receives more than six credits of F grades in the program automatically assumes probationary status in the major.

**Trouble Policy:** Transfer students are required to complete a minimum of 40 semester credits of the major at Minnesota State University, Mankato.

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### **COURSE DESCRIPTIONS**

#### **272 (3) Introduction to Recreation, Parks and Leisure Services**

A foundation course that introduces the student to the profession of leisure services. Emphasis is placed on recreation in the student's life, the development of the profession, the community leisure service system and careers in recreation, parks and leisure services. F, S

#### **274 (3) Therapeutic Recreation Service**

This course is designed to be an overview of Therapeutic Recreation Services in a variety of human service settings with emphasis on the assessment, planning, implementation and evaluation of leisure and recreation programs performed by therapeutic recreation special-

## Recreation, Parks & Leisure Services

ists serving persons with physical, mental, emotional or social limitations. S

### **277 (3) Recreation Leadership**

Through interactive classroom assignments, students develop expertise in planning, leading and evaluating a recreational experience. Foundations of leadership, group dynamics and motivation are also included. F, S

### **278 (3) Leisure and Lifestyle**

This course addresses leisure wellness and incorporates leisure into life as a balancing force for healthy living. Leisure is studied in relation to: work, time and money management, stress management, healthy relationships, life choices and decisions, personal and community resources, career opportunities and in relation to current issues in politics and in the work place. F, S

### **282 (3) Wildlife as a Recreation Resource**

A broad survey course that is concerned with game and non-game wildlife species. Habitat is stressed throughout the course as a necessity for maintaining a species. Funding of wildlife programs and changing attitudes of the public are concerns throughout this course. F, S

### **325 (3) Programming for Outdoor Settings**

This course exposes the parks and recreation major to basic outdoor skills. The camping movement in America is discussed as well as progression planning strategies for outdoor recreation. F

### **370 (3) Review of Outdoor Recreation Research**

This course traces the historical development of outdoor recreation from the ancient Middle East to the present. Research efforts have resulted in many new outdoor activities, legislative mandates for land managing agencies, and the development of new equipment and attire for the participant. S

### **376 (3) Program Planning in Recreation, Parks, and Leisure Services**

The emphasis of this course is on the program planning process—from creating the idea through evaluation of the program—and how it fits into the agency profile. Various formats such as leisure learning, tournaments, trips and outings, and special events are highlighted for a variety of leisure service agencies. F, S

### **377 (3) Public Relations**

Focuses on the total planning, implementation and techniques of effective public relations. F, S

### **379 (3) Management of Parks & Recreation Facilities**

This course introduces students to basic management and planning techniques for a wide variety of in-door and out-door recreation facilities. F, S

### **447 (3) Programming in Therapeutic Recreation**

This course details the Therapeutic Recreation process: assessment, planning, implementation and evaluation in relation to individual treatment programs in Therapeutic Recreation Service. Emphasis is on interpreting assessment data, writing measurable goals and objectives, imple-

menting an actual program and documenting program results in terms currently used in human service settings.

Pre: RPLS 274

F

### **450 (3) Therapeutic Recreation Techniques**

This course is designed to teach a wide variety of interventions and facilitation techniques used in therapeutic recreation programs to give the student knowledge, practice and ability in the implementation of leisure and recreation programs for persons with special needs.

Pre: RPLS 274 and 447

S

### **465 (3) Event Management**

This course introduces students to special event planning, development, budgeting, promotion and evaluation. The use, recruitment, evaluation and recognition of volunteers as well as fund raising strategies are discussed and employed.

Pre: RPLS 377

S

### **471 (3) Research Design in Recreation, Parks and Leisure Services**

This course guides the student through the survey process including the creation and implementation of a questionnaire. The data collected are then analyzed and a formal report is prepared. Computer skills are emphasized.

F, S

### **473 (3) Administration of Leisure Time Programs**

Development of approaches in staffing, planning, organization, coordination, evaluation and directing programs and personnel. Permission required from professor.

F, S

### **474 (2) Camp Administration**

Overview of administration functions in resident camps and day camp settings.

ALT

### **475 (3) Public Land Use Policy**

Traces the history of public lands in the United States, their acquisition and disposal. Congressional charges to executive agencies managing national lands and state and local government responsibilities for managing non-federal public lands. Attention is given to international oceanic resources and how the international community will manage these resources.

F, S

### **476 (3) Recreation Vehicular Safety**

This course covers the ever-expanding mechanized leisure experience field with emphasis upon laws and regulations governing the utilization of the resource base, legal and ethical use of equipment in today's complex society. Utilization of maintenance equipment in leisure oriented facilities is stressed.

S

### **477 (3) Commercial Recreation and Tourism**

This course traces the evolution of commercial recreation and tourism which has become the world's number one industry. Cultural, economic, geographic, and political forces will be examined as to their role in this rapidly expanding area.

F

### **481 (3) Park Systems and Planning**

Traces the history of the parks movement in the United

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## Recreation, Parks & Leisure Services

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States, selected legislation establishing parks and the enactment of funding legislation. The importance of public participation, planning and political strategies are stressed. Pre: GEOG 373 F

### 482 (3) Leisure Needs of the Aging

Leisure as an integral aspect of successful aging is the focus of this course which includes: leisure in relation to physical, intellectual, social and psychological aspects of aging and successful leisure programming in community based settings and in long term care. F

### 483 (3) Legal Processes in Parks and Leisure Services

This course investigates legislative and budgetary processes utilized in the public, non-profit, and private sectors of the leisure services profession. F, S

### 484 (1) Field Experience

Students are required to complete the Field Experience in order to be eligible to enroll in RPLS 495 Practicum. Students will contract with the advisor to complete 60 hours of volunteer or paid experience in a leisure services organization. Written permission required from the advisor. F, S

### 485 (1-3) Selected Topics

F, S

### 486 (1-4) Minor Practicum

Course work set through student/advisor agreement. F, S

### 487 (6) Practicum

Students who are graduating on a catalog prior to 2001-2002 catalog are required to complete one full semester of professional work experience. This is completed once all major classes are completed. Written permission is required from the student's advisor one semester in advance. The student enrolls in both RPLS 487 and RPLS 488 at the same time for a total of 12 credits.

Pre: Completion of the Professional Experience Plan and all RPLS major classes. F, S

### 488 (6) Practicum

Students who are graduating on a catalog prior to 2001-2002 catalog are required to complete one full semester of professional work experience. This is completed once all major classes are completed. Written permission is required from the student's advisor one semester in advance. The student enrolls in both RPLS 487 and RPLS 488 at the same time for a total of 12 credits.

Pre: Completion of the Professional Experience Plan and all RPLS major classes. F, S

### 489 (3) Seminar: Clinical Aspects of Therapeutic Recreation

This course is designed to develop student's ability to function as a member of the interdisciplinary treatment team and practice critical thinking, writing and oral skills related to treatment decisions, ethical issues, professional issues, and health care delivery systems.

Pre: RPLS 274 and 447 F

### 490 (2-4) Workshop

V

### 495 (8) Practicum

Students who are graduating on or after the 2001-2002 catalog must enroll in this Practicum. The Practicum, which is one full semester of professional work experience, is completed at the end of the student's course work and requires 480 hours of service at a Department-approved agency where the student works fulltime for 12 weeks. Written permission is required from the student's advisor one semester in advance.

Pre: RPLS 484

### 497 (1-8) Internship

Course based on student/advisor agreement. F, S

### 498 (1-8) Internship

Course based on student/advisor agreement. F, S

### 499 (1-4) Individual Study

Course work set by student/advisor discussion. F, S

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## Religious Studies

*College of Arts & Humanities*

*Department of Religious Studies*

227 Armstrong Hall • 507-389-2012

Director: College of Arts and Humanities

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No new minors are being accepted to this program, which is in the process of program closure.

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## Scandinavian Studies

*College of Arts & Humanities*

136 Nelson Hall • 507-389-2728 or 389-6412

Web site: [www.mnsu.edu/dept/modernlang/scanstudies.html](http://www.mnsu.edu/dept/modernlang/scanstudies.html)

Fax: 507-389-2816

Director: Nancy L. Wicker

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Diana Black, Kathryn Elliott, John Gaterud, Birgitta Hendrickson, Tomasz Ingot, Paul Lindfors, John Parham, Harry Solo, Nancy Wicker, Tamara Wilkins

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The Scandinavian Studies program is an interdisciplinary program that combines acquisition of the Norwegian or Swedish language with study of the diversity and richness of the greater Nordic cultural region of Norway, Sweden, Denmark, Finland, and Iceland. With a major or minor in Scandinavian Studies, students become familiar with the heritage of Scandinavia from the Vikings to modern design and learn more about the role of the Nordic nations in communications technology, environmental awareness, social equality, and international peace initiatives in the contemporary world. A Scandinavian Studies minor can enhance a traditional major and serve to internationalize students' education, whether in international relations or international business, art or literature. It is recommended that students combine a Scandinavian Studies major or minor with studies in fields such as art, international business, international relations, modern languages, political science, or social work.



## Scandinavian Studies

The Scandinavian Studies Program involves MSU departments and programs including art, English, gerontology, international relations, law enforcement, mass communications, modern language, political science, and social work. In addition, MSU departments of computer and information sciences, international business, and social work have set up foreign exchange programs in Scandinavia. Additional courses, particularly for majors, may also be completed in language, literature, history, and peace studies at Gustavus Adolphus College in nearby St. Peter, Minnesota. MSU students carrying 12 semester credits may pay MSU tuition to take a course at Gustavus Adolphus College that is not offered at MSU.

### SCANDINAVIAN STUDIES BA

The Bachelor of Arts major in Scandinavian Studies requires 32 semester credits, including a core of language courses (usually at least two years), a 3-credit "capstone" experience, and approved electives. Students interested in focusing on Scandinavian languages and literature may choose to major in Scandinavian Studies, but they are strongly encouraged to pursue a second major in another B.A. program or even two minors that will complement students' interdisciplinary studies. One minor is required. Majors will work closely with a Scandinavian Studies advisor to develop a course of studies that offers flexibility to suit students' needs and interests.

#### Required for Major (Language Sequence and Capstone Experience, 13-19 credits):

SCAN 101	Elementary Norwegian I, offered Fall 2003 (4)
SCAN 102	Elementary Norwegian II, offered Spring 2004 (4) <b>or</b>
SCAN 111	Elementary Swedish I, offered Fall 2002 (4)
SCAN 112	Elementary Swedish II, offered /spring 2003 (4) <b>and</b>
SCAN 299-02	Independent Study: Intermediate Norwegian I, offered Fall 2004 (1-4)
SCAN 299-03	Independent Study: Intermediate Norwegian II, offered Spring 2005 (1-4) <b>or</b>
SCAN 299-04	Independent Study: Intermediate Swedish I, offered Fall 2003 (1-4)
SCAN 299-02	Independent Study: Intermediate Swedish II, offered Spring 2004 (1-4) <b>and</b>
SCAN 490	Major Project in Scandinavian Studies (3)

#### Required for Major (13-19 credits):

Some elective courses concentrate exclusively on study of Scandinavia, while others have a strong component relating to the Nordic countries. Students taking these related courses for Scandinavian Studies credit should inform the instructor, and the students will be required to write a paper or complete a project on a Nordic topic.

Individual study courses can also be arranged in several departments with faculty who have special interests in Scandinavia. Special Topics and Seminars may also be offered. Some elective courses may be taken at Gustavus Adolphus College with approval of the MSU Director of Scandinavian Studies.

#### Elective courses at MSU

ANTH 436	Anthropology of Aging (3)
ART 413	Scandinavian Art (3)
ART 492	Art History Seminar (1-6)
ART 494	Topics (3)
ART 499	Individual Study (1-9)
ENG 499	Individual Study (1-4)
GERO 200	Aging: Interdisciplinary Perspectives (3)
GERO 485	Topics in Gerontology (1-3)
GERO 499	Individual Study in Gerontology (1-4)
LAW 434	Comparative Criminal Justice Systems (3)
MASS 499	Individual Study (1-2)
POL 439	Comparative Social Policy: The Welfare State in Europe & the Americas (3)
POL 447	Europe: Politics and Policy (3)
POL 449	Comparative Criminal Justice System (3)
SCAN 299-01	Individual Studies (1-4)
SCAN 499	Individual Studies (1-4)
SOWK 255	Global Responses to Human Need (3)
WOST 445	Women and Aging (1-4)

#### Elective courses at Gustavus Adolphus College

See the current Gustavus Adolphus College Bulletin for course offerings in advanced Swedish language, literature, history, and peace studies.

#### Required Minor: Yes, Any.

### SCANDINAVIAN STUDIES MINOR

A minor in Scandinavian Studies requires 20 semester credits and can be completed at MSU. The core of at least 8 credits in Norwegian or Swedish language is supplemented by a 1-credit "capstone" experience plus approved electives. This interdisciplinary minor can be combined with any major at MSU. Because the minor is tailored to the individual interests, students should consult the Scandinavian Studies program director as well as the major advisor.

#### Required for Minor (Language Sequence and Capstone Experience, 9 credits):

SCAN 101	Elementary Norwegian I, offered Fall 2003 (4)
SCAN 102	Elementary Norwegian II, offered Spring 2004 (4) <b>or</b>
SCAN 111	Elementary Swedish I, offered Fall 2002 (4)
SCAN 112	Elementary Swedish II, offered /spring 2003 (4)
SCAN 492	Minor Project in Scandinavian Studies (3)

## Scandinavian Studies

### Required for Minor (11 credits):

Some elective courses concentrate exclusively on study of Scandinavia, while others have a strong component relating to the Nordic countries. Students taking these related courses for Scandinavian Studies credit should inform the instructor, and the students will be required to write a paper or complete a project on a Nordic topic. Individual study courses can also be arranged in several departments with faculty who have special interests in Scandinavia. Special Topics and Seminars may also be offered. Some elective courses may be taken at Gustavus Adolphus College with approval of the MSU Director of Scandinavian Studies.

#### Elective courses at MSU

ANTH 436	ART 413	ART 492
ART 494	ART 499	ENG 499
GERO 200	GERO 485	GERO 499
LAW 434	MASS 499	POL 439
POL 447	POL 449	SCAN 299
SCAN 499	SOWK 255	WOST 490

#### Elective courses at Gustavus Adolphus College

See the current Gustavus Adolphus College Bulletin for course offerings in advanced Swedish language, literature, history, and peace studies.

### POLICIES/INFORMATION

**GPA Policy.** A grade of "C" or better must be earned for minor or major credits.

**P/N Grading Policy.** Work done for a minor or major must be done for letter grade, except the Minor Project in Scandinavian Studies (1 credit) which must be taken P/N.

Norwegian and Swedish elementary language courses are offered during alternate years.

SCAN 101, 102, 111, and 112 meet General Education requirements for Category 8: Global Perspectives.

### COURSE DESCRIPTIONS

#### 101 (4) Elementary Norwegian I

An introduction to the basic skills of listening, speaking, reading, and writing coupled with culture.

ALT-F

#### 102 (4) Elementary Norwegian II

An introduction to the basic skills of listening, speaking, reading, and writing coupled with culture.

Pre: SCAN 101

ALT-S

#### 111 (4) Elementary Swedish I

An introduction to the basic skills of listening, speaking, reading, and writing, coupled with cultural notes.

ALT-F

#### 112 (4) Elementary Swedish II

An introduction to the basic skills of listening, speaking, reading, and writing, coupled with cultural notes.

Pre: SCAN 111

ALT-S

#### 299-01 (1-4) Individual Study

V

#### 299-02 (1-4) Independent Study: Intermediate Norwegian I

Development of reading and listening skills, oral and writing practice within a cultural context.

Pre: SCAN 102, or equivalent

ALT-F

#### 299-03 (1-4) Independent Study: Intermediate Norwegian II

Development of reading and listening skills, oral and writing practice within a cultural context.

Pre: SCAN 102, or equivalent

ALT-S

#### 299-04 (1-4) Independent Study: Intermediate Swedish I

Development of reading and listening skills, oral and writing practice within a cultural context.

Pre: SCAN 112, or equivalent

#### 299-05 (1-4) Independent Study: Intermediate Swedish II

Development of reading and listening skills, oral and writing practice within a cultural context.

Pre: SCAN 112, or equivalent

#### 490 (3) Major Project in Scandinavian Studies

Individual project demonstrating ability to synthesize experience in interdisciplinary major, drawing together different areas of study focusing on specific topic, problem or concern and demonstrating ability to use a Scandinavian language. Approval of Scandinavian Studies program director required.

Pre: Admission to college as Scandinavian Studies Major.

#### 492 (1) Minor Project in Scandinavian Studies

Individual project demonstrating ability to synthesize experience in interdisciplinary minor, drawing together different areas of study focusing on specific topic, problem or concern and demonstrating elementary use of a Scandinavian language. Approval of the Scandinavian Studies program director required. Must be taken P/N.

#### 499 (1-4) Individual Study

Advanced study of works by selected Swedish or Norwegian authors.

Pre: SCAN 299-03 or 299-05

V

## Science Teaching

Web site: [www.mnsu.edu/dept/biology](http://www.mnsu.edu/dept/biology)  
[www.mnsu.edu/dept/chemgeol](http://www.mnsu.edu/dept/chemgeol)  
[www.mnsu.edu/dept/physast](http://www.mnsu.edu/dept/physast)  
[www.mnsu.edu/dept/geog](http://www.mnsu.edu/dept/geog)

Coordinators:

Daryl Adams, Ph.D., Biological Sciences  
 Ed Borchardt, Ph.D., Physics  
 Donald Friend, Ph.D., Geography  
 James Pierce, Ph.D., Astronomy  
 Jeffrey Pribyl, Ph.D., Chemistry  
 Dean Moosavi, Ph.D., Geology

The State of Minnesota grants science teacher licensure for grades 5-8 general science, 9-12 Chemistry, 9-12 Earth Science, 9-12 Life Science, and 9-12 Physics. Students

## Science Teaching

earning a degree from MSU will qualify for two licenses (1) 5-8 general science and (2) 9-12 specialty.

Each major requires the 31 credit general core and a science emphasis that ranges from 27-35 credits of science and science teaching methods courses. In addition, the student must complete a 30 credit professional education component and the 3 credit Drug Education course.

The University Science Teaching Program must meet specific competencies to meet professional accreditation and licensure requirements. To stay within the required degree limits of 128 credit hours, students are strongly advised to select courses within the 44 credit general education program that meet both teaching program and general education needs. It is important for the student to meet with their advisor to assist with program planning.

A minor is not required for any of the science teaching programs; however, to broaden one's teaching opportunities, double majors are encouraged. For further details, the student should check with one of the science teaching advisors for an overview of available opportunities.

### FOR ALL SCIENCE TEACHING PROGRAMS

#### Required General Education (3 credits):

HLTH 310 Drug Education (3)

#### Recommended General Education (22-23 credits):

AST 101 Introduction to Astronomy (3)  
 BIOL 105 General Biology I (4)  
 GEOL 121 Physical Geology (4)  
 KSP 220 Human Relations in a Multicultural Society (3)  
 PHYS 211 Principles of Physics I (4)  
 Choose one from the following:  
 MATH 112 College Algebra (4)  
 MATH 113 Trigonometry (3)  
 MATH 115 Precalculus (4)  
 MATH 121 Calculus I (4)

#### Required General Science Core (31 credits):

AST 101 Introduction to Astronomy (3)  
 BIOL 105 General Biology I (4)  
 BIOL 106 General Biology II (4)  
 CHEM 201 General Chemistry I (5)  
 GEOL 121 Physical Geology (4)  
 GEOL 310 Earth and Space Systems (3)  
 PHYS 211 Principles of Physics I (4)\*  
 PHYS 212 Principles of Physics II (4)\*

\* Physics 221 (5) and 222 (5) may substitute. The additional credit hours will reduce the number of credits in the advanced physics courses.

#### Required for All Majors

#### (Professional Education, 30 credits):

See the SECONDARY EDUCATION section for additional information about admissions to Professional Education, and course requirements.

#### Required Minor: None.

### CHEMISTRY 5-12 BS TEACHING 128

#### Required General Education (3 credits)

#### Recommended General Education (22-23 credits)

#### Required General Science Core (31 credits)

#### Required Professional Education (30 credits)

#### Required for Major (Core, 35 credits)

MATH 121 Calculus I (4)  
 CHEM 202 General Chemistry II (5)  
 CHEM 305 Analytical Chemistry (4)  
 CHEM 320 Organic Chemistry I (with lab) (5)  
 CHEM 360 Principles of Biochemistry I (4)  
 CHEM 381 Introduction to Research (2)  
 CHEM 412 Intermediate Inorganic Chemistry (2)  
 CHEM 440 Physical Chemistry I (3)  
 CHEM 450 Physical Chemistry Lab I (1)  
 CHEM 479 Teaching in Physical Science (4)  
 CHEM 495 Senior Seminar (1)

#### Required Minor: None.

### EARTH SCIENCE 5-12 BS TEACHING 128

#### Required General Education (3 credits)

#### Recommended General Education (22-23 credits)

#### Required General Science Core (31 credits)

#### Required Professional Education (30 credits)

#### Required for Major (Core, 24 credits):

AST 125 Observational Astronomy (3)  
 GEOG 217 Weather (3)  
 GEOG 315 Geomorphology (3)  
 GEOG 410 Climatic Environments (3)  
 GEOL 122 Earth History (4)  
 GEOL 201 Elements of Mineralogy (4)  
 GEOG 464 Teaching Earth Science (4) *or*  
 GEOL 479 Teaching Earth Science (4)

#### Required for Major (Research, 1-3 credits):

GEOG 440 Field Studies: Colorado (3)  
 GEOG 440 Field Studies: Field Methods (3)  
 GEOG 480 Seminar: Snow and Ice (3)  
 GEOG 499 Individual Study (1-3)  
 GEOL 499 Individual Study (1-5)

#### Required for Major (Electives, 9 credits):

Must choose from at least two departments  
 AST 102 Introduction to the Planets (3)  
 AST 104 Introduction to Experimental Astronomy (2)  
 GEOG 373 Introduction to GIS (4)  
 GEOG 420 Conservation of Natural Resources (3)  
 GEOL 270 Structural Geology (4)  
 GEOL 350 Environmental Geology (4)  
 GEOL 450 Hydrogeology (3)

#### Required Minor: None.

### LIFE SCIENCE 5-12 BS TEACHING 128

#### Required General Education (3 credits)

#### Recommended General Education (22-23 credits)

#### Required General Science Core (31 credits)

#### Required Professional Education (30 credits)

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## Science Teaching

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### Required for Major (Core, 26 credits):

BIOL 211 Genetics (3)  
BIOL 215 General Ecology (4)  
BIOL 220 Human Anatomy (4)  
BIOL 270 Microbiology (4)  
BIOL 301 Evolution (2)  
BIOL 408 Vertebrate Ecology (4)  
BIOL 485 Biology Teaching Methods and Materials (4)  
BIOL 499 Individual Study: Research Project (1)

### Required for Major (Electives, 9 credits):

Choose a minimum of 9 credits from Biology courses from the 300-400 level

### **PHYSICS** (5-12) BS TEACHING

#### Required General Education (3 credits)

#### Recommended General Education (22-23 credits)

#### Required General Science Core (31 credits)

#### Required Professional Education (30 credits)

### Required for Major (Core, 27-29 credits):

MATH 121 Calculus I (4)  
MATH 122 Calculus II (4)  
PHYS 381 Tutoring Physics (1-2)  
PHYS 435 Modern Physics I (3)  
PHYS 453 Solid State Physics (3)  
PHYS 493 Undergraduate Research (1-2)  
PHYS 482 Teaching Methods and Materials in Physical Science (4)

### Required for Major (Electives, Minimum of 7 credits):

Choose a minimum of three credits from:

EET 112 Elementary Electronics (3)  
EET 113 DC Circuits (3)  
EET 115 Understanding Computers (3)

Choose a minimum of 4 credits from:

PHYS 107 Physics of Flight (3)  
PHYS 404 Physics and Society (2)  
PHYS 417 Biophysics (2)  
PHYS 436 Modern Physics II (3)  
PHYS 441 Mechanics (4)  
PHYS 447 Electricity and Magnetism I (3)  
PHYS 448 Electricity and Magnetism II (3)  
PHYS 457 Optics (3)  
PHYS 461 Quantum Mechanics (4)  
PHYS 465 Computer Applications in Physics (3)  
PHYS 475 Advanced Laboratory (2)

### Required Minor: None.

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## POLICIES/INFORMATION

**GPA Policy.** Students obtaining a degree in science teaching must maintain a minimum cumulative GPA of 2.50. Students who are not science teaching majors should consult an advisor concerning possible additional course requirements.

**P/N Grading Policy.** Courses leading to a degree in science teaching may not be taken on a P/N basis except where P/N grading is mandatory.

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## Secondary 5-12 & K-12 Professional Education

Business Education (collaborative program with Winona) (5-12)

Communication Arts and Literature (5-12)

Dance and Theatre Arts (K-12)

Developmental Adapted Physical Education (K-12)

English as a Second Language (K-12)

Family Consumer Science (5-12)

Health Sciences (5-12)

Instrumental and Vocal Music (K-12)

Mathematics (5-12)

Physical Education (K-12)

Science (Life Science, Chemistry, Earth & Space

Sciences, Physics) (5-12)

Social Studies (5-12)

Visual Arts (K-12)

World Languages and Cultures (Spanish and French) (K-12)

### *College of Education*

Department of Educational Studies: K-12 &

Secondary Programs (KSP)

*Chair: Debra J. Anderson, Ed.D.*

*Coordinator: Guynel Reid, Ph.D.*

313 Armstrong Hall • 507-389-1965

Johnson Afolayan, Ph.D., Debra J. Anderson, Ed.D., Darrol Bussler, Ph.D., Frank Birmingham, Ph.D., Don Descy, Ph.D., Patricia Hoffman, M.S., Sandra Mullins, Ed.D., Scott Page, Ph.D., Guynel Reid, Ph.D.

The K-12 and Secondary Programs department prepares undergraduate and graduate students for initial licensure as professional educators in K-12, middle and high school classrooms. Program emphasis is placed upon facilitating students to gain the knowledge, skills, and dispositions needed to function effectively as educators.

This section describes **ONLY** the professional education requirements for completion of teaching degrees at the 5-12 and K-12 levels. Students interested in teaching at the 5-12 and K-12 levels must be admitted to **BOTH** their major program and professional education.

Formal evaluation of prior academic professional education preparation will be evaluated by Dr. Debra J. Anderson. Formal approval of coursework is based on course descriptions, syllabi, samples of completed work and/or field experience evaluations.

### Admission to Professional Education

*Academic Advising Office*

*Cheryl Kalakian, Student Relations Coordinator*

117 Armstrong Hall • 507-389-1215

All students working toward a 5-12 or K-12 teaching degree must be admitted to professional education prior to enrollment in upper division coursework in professional education. Application forms for admission may

## Secondary 5-12 & K-12 Professional Education

be obtained in 117 Armstrong Hall. Application to professional education should be made when the following requirements have been met:

- a minimum of 30 earned semester credit hours
- a minimum 2.5 cumulative GPA
- evidence of completion of the Praxis I: Pre-Professional Skills Test (PPST)
- completion of faculty recommendation folder

**General Studies Competencies.** Students majoring in 5-12 and K-12 education must demonstrate competencies in the arts, communications, history, literature, mathematics, philosophy, sciences, social sciences, and multicultural and global perspectives. They must also demonstrate competency in health-related issues, including drug use and misuse. Students should visit with the College of Education Student Relations Coordinator for assistance in selecting general education coursework to meet these competencies.

**Advising.** Students are assigned an advisor in their subject-matter major. In addition the KSP department provides group advising sessions at least one week prior to registration each semester. For more information stop by 313 Armstrong Hall.

**Clinical Experiences.** A major component of professional education coursework involves clinical experience in area schools. These experiences are graduated in expectation, time commitment, and skills practice. Multiple methods of assessment are used and evidence collected to provide a view of the clinical student's skills and abilities. These methods include direct observations of teaching activities by public school and University faculty, the use of videotaped lessons, and activities for self-assessment, use of logs, participation in on-line activities, and participation in activities reflective of the professional responsibilities of teachers. The successful completion of each clinical experience is necessary for progression into future clinical activities (e.g., student teaching). All clinical placements are initiated by the Office of Clinical and Field Experience. Students involved in any clinical experience need to undergo a background study (once per academic year) to assess misdemeanor and felony conviction records maintained at the Minnesota Bureau of Criminal Apprehension. This information is provided to districts for their determination of suitability. The Office of Clinical and Field Experience coordinates the background check process.

**Teacher Licensure.** The University recommends licensure to a state upon satisfactory completion of a licensure program. However, licensure does not occur automatically through graduation and the awarding of a diploma. Students need to make application for a Minnesota teaching license at the close of the term in which they graduate. The College of Education, 118 Armstrong Hall, coordinates the licensure process. In addition to meeting all program requirements, the PPST examination of skills in reading, writing, and mathematics needs to be successfully completed, as well as the Praxis II

Pedagogy and/or content examination. Minnesota state law requires that all candidates applying for initial licensure in this state be fingerprinted for national background checks. A conduct review statement will also need to be completed and signed. There is a \$26 fee for the criminal background check. The fee for the issuance of a State of Minnesota teaching license is \$47. Please contact Gail Orcutt, Licensure Coordinator, in 118 Armstrong Hall for any further questions in regard to the licensure process.

### Required for General Education (3 credits):

HLTH 310 Drug Education (3)

### Required Professional Education, (30 credits):

#### BLOCK I

KSP 210 Exploration of Professional Education (2)  
KSP 220 Human Relations in a Multicultural Society (3)

Floating course (can be taken with Block I or II)

KSP 420 Media Utilization for Secondary Education (2) or

KSP 403 Media Utilization for K-12 Education (2)  
Clinical hours for Block I=28.

#### BLOCK II

KSP 310 Development & Learning in the Inclusive Classroom (5)

Clinical hours for Block II=25.

#### BLOCK III

KSP 410 Philosophy and Practices in the Middle and High School (3)

KSP 420 Planning, Instruction, and Evaluation in the Secondary School (3)

Clinical hours for Block III=25

#### BLOCK IV

KSP 475 Social Context of Learning (1)

For 5-12 majors:

KSP 477 Student Teaching (11)

For K-12 majors:

KSP 476 Supplem. Student Teaching Sec. (6)

KSP 478 Supplem. Student Teaching (5)

### Student Teaching. (119 Armstrong Hall)

*Director of Clinical and Field Experiences: Tracy Pellett.*

Student teaching at Minnesota State University is a result-oriented, performance based 16-week program requiring the demonstration of an acceptable level of teaching performance. This performance is in the areas of planning and preparation, enhancing the learning environment, teaching for student learning, and professionalism. Multiple methods of assessment are used and evidence collected to provide a view of the student teacher's skills and abilities. These methods include direct observations of teaching activities by public school and university faculty, the use of videotaped lessons and activities for self-assessment, use of logs, participation in on-line activities, and participation in



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## Secondary 5-12 & K-12 Professional Education

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activities reflective of the professional responsibilities of teachers (e.g., parent conferences). The Director of Clinical and Field Experience requests placements for all student teachers in partner districts. Student teachers should not contact schools regarding their placement. Admission to the student teaching experience is contingent upon completion of a minimum of 95 semester credits, a cumulative grade point average of 2.5, grades of "C" or better for all program requirements, admission to teacher/professional education, completion of all methods and professional education course work (except KSP 475), completion and validation of formal application materials one semester in advance of the student teaching semester (obtain specific dates from 119 Armstrong Hall), attendance at all preliminary student teaching meeting(s), submission of scores on the PRAXIS I (Reading/Writing/Math) tests, recommendation of advisor, school district administration, cooperating teacher(s), and Director of Clinical & Field Experience, and completion of Minnesota State Police background check materials. Application materials are available in 119 Armstrong Hall.

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### POLICIES/INFORMATION

**GPA Policy.** Coursework in professional education requires a grade of "C" or better. A cumulative career GPA of 2.5 is required.

**P/N Grading Policy.** Grades are required in all professional education coursework except courses that are offered on a P/N basis only.

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### COURSE DESCRIPTIONS FOR PROFESSIONAL EDUCATION

Course listed below are taught in the K-12 and Secondary depart (KSP).

#### **210 (2) Exploration of Professional Education**

A first course for K-12 and secondary education majors. Experience in middle, junior high and high school classrooms.

#### **220 (3) Human Relations in a Multicultural Society**

Study of interpersonal skills, motivation, and group skills. Applied to educational settings. Requires 18 hours clinical service learning experience (out of class). Meets State of Minnesota human relations requirement for teacher licensure.

#### **310 (5) Development and Learning in the Inclusive Classroom**

Focuses on principles of human development and psychology of learning-behavioristic, cognitive, and humanistic, for all learners, including the special needs students in the regular classroom.

#### **402 (2) Media Utilities for Secondary Education**

Instructional media used in the secondary classroom is demonstrated and used by the students. Resource selection and evaluation is stressed. Electronic media,

computer aided instruction, telecommunications, and standard classroom media applications are stressed.

#### **403 (2) Media Utilization for K-12 Education**

Learning theory and visual literary skills. Elements of visual communications. Conventions of photograph and film. Propaganda techniques. Advertising. Typography and graphic design. Designing and producing visuals that get a message across.

#### **410 (3) Philosophy and Practices in the Middle and High School**

Unique philosophy and strategies for teaching middle school and high school students, concepts, curriculum and teaching methods.

#### **420 (3) Planning, Instruction, and Evaluation in the Secondary School**

Analysis of strategies/techniques for short- and long-term planning, instructional models, and assessment of student growth and learning.

#### **475 (3) The Social Context of Learning**

Explores the relationship of the school and community as well as the relationships and roles of the teacher, student, and the school. Knowledge of the social, historical, philosophical foundations of education, school law, finance and governance, ethics, democracy and multiculturalism is explored. Requires twelve hours of out-of-class clinical experience.

Pre: Recommended for final semester of Professional Education.

#### **476 (6) Supplementary Student Teaching, Secondary (Full Semester)**

Student teaching in the secondary school including weekly seminar for K-12 majors.

Pre: Admission to student teaching

Co: KSP 478 and KSP 475

#### **477 (11) Student Teaching (Full Semester)**

Student teaching in the secondary school including weekly seminar for 5-12 majors.

Pre: KSP 420 and admission to student teaching

Co: KSP 475

#### **478 (5) Supplementary Student Teaching (Full Semester)**

Student teaching in the elementary school including weekly seminar for K-12 majors.

Pre: Admission to student teaching

Co: KSP 476 and KSP 475

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### LIBRARY MEDIA EDUCATION

**Library Media Education** courses offer instruction and experience in acquiring, administering, evaluating. Producing, organizing and using print, audiovisual, and electronic media. Today's rapid expansion of information is characterized by a great variety of media through which knowledge is recorded and distributed. Now and in the future, libraries and information centers must deal with transfer of data and information in all formats. Educators must meet the information needs, ranging from recre-

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## Secondary 5-12 & K-12 Professional Education

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ational to research, of preschool children to adults. Please refer to the graduate bulletin for information on the master's and specialist degree programs in Library Media Education which are designed to prepare professionals for careers in school library media programs.

**Other courses offered by the K-12 and Secondary Program department – some meet general education requirements, some meet Library Media Education program requirements:**

### **101 (3) Exploring and Applying Values**

This course focuses on students' personal history, ethical views and values. Students will be asked to state and apply those views and values to current political and social issues.

A service-learning experience is required for this class.

### **105 (1) Library Orientation**

A basic course to help students become familiar with the library of Minnesota State University, Mankato and the use of information resources.

### **106 (1) Education and Cultural in the United States**

Course gives students new to this country and to the U.S. higher education a broad overview of the U.S. educational system and provides a forum for discussion and comparison of customs and beliefs as they affect relationships among students and professors.

Pre: International Student

### **205 (1) Library Orientation II**

Specialized references sources, computer strategies, nationally available data banks, community resources. May apply toward general education.

### **210 (2) Exploration of Professional Education**

A first course for K-12 and secondary education majors. Experience in middle, junior high and high school classrooms.

### **220 (3) Human Relations in a Multicultural Society**

Study of interpersonal skills. Motivation, and group skills. Applied to educational settings. Required 18 hours clinical service learning experience (out of class). Meets State of Minnesota human relations requirement for teacher licensure.

### **235 (3) Human Development**

Designed for non-teacher education students, this is a general education course considering human development from a life span perspective.

### **250 (3) Social Justice in School and Community**

Analyzing justice as it relates to education and the criminal justice system. Emphasis is on comparing Retributive Systems with the newer Restorative Justice. Active learning methods in the classroom, schools and communities, including service-learning.

### **251 (3) Coming of Age: Gender and Culture**

Students will become aware of diverse experiences of coming of age and will reflect on their own experiences. Diversity of experiences presented will include: race/

ethnicity, gender, sexual orientation, religion, socio-economic class, ability/disability and nationality.

### **290 (1-2) Workshop**

Short-term workshops dealing with specific subjects germane to the broader disciplines with in Educational Foundations: Social/Philosophic Issues in Education, Development and Learning Psychology, Human Relations and Cultural Diversity, Research and Assessment/Evaluation, and Teaching in Higher Education.

### **301 (2) Instructional Media Utilization**

Instructional media used in the elementary classroom is demonstrated and used by the students. Resource selection and evaluation is stressed. Electronic media, computer-aided instruction, telecommunications, and standard classroom media applications are stressed.

### **310 Development and Learning in the Inclusive Classroom**

Focuses on principles of human development and psychology of learning-behavioristic, cognitive, and humanistic, for all learners, including the special needs students in the regular classroom.

### **320 (3) Special Student in General Class**

Provides general education majors with information and strategies including the special needs students in the regular classroom. This course is required of all education majors except those in Physical Education.

### **334 (3) Assess Post-Secondary Learner**

Course content addresses formal and informal, Standardized evaluation of learner achievement in the classroom and programmatic evaluation. Assigned projects will accommodate the student's present/future professional career track.

### **402 (2) Media Utilization for Secondary Education**

Instructional media used in the secondary classroom is demonstrated and used by the students. Resource selection and evaluation is stressed. Electronic media, computer aided instruction, telecommunications, and standard classroom media applications are stressed.

### **403 (2) Media Utilization for K-12 Education**

Learning theory and visual literary skills. Elements of visual communications. Conventions of photograph and film. Propaganda techniques. Advertising. Typography and graphic design. Designing and producing visuals that get a message across.

### **404 (2) Curriculum Application of Technology in Education**

To prepare pre-service and in-service teachers to use technology in the elementary classroom. Applications to each content area will be considered. Graduate students will have additional course requirements.

### **407 (2) Teaching in a Multicultural Society**

Adaptation of curriculum, classroom organization and teaching practices. Graduate students will have additional course requirements.

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## Secondary 5-12 & K-12 Professional Education

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### **408 Teaching to the K-12 ELL Student**

Instructional media used in the elementary classroom is demonstrated and used by the students. Resource selection and evaluation is stressed. Electronic media, computer aided instruction, telecommunications, and standard classroom media applications are stressed. Graduate students will have additional course requirements.

### **410 (3) Philosophy and Practices in the Middle and High School**

Unique philosophy and strategies for teaching middle school and high school students, concepts, curriculum and teaching methods.

### **415 (2) Materials for Younger Children**

Examination of print and audiovisual media for younger children birth to age seven. Identification selection sources to identify materials. Evaluation of resources, including but not limited to, research collections, discussion groups, and electronic periodicals. Graduate students will have additional course requirements.

### **416 (2) Information Resources**

Examination of information resources used in K-12 school library media programs. Categories include but are not limited to encyclopedias, dictionaries, atlases, government publications, biography sources, indexes, on-line public access catalogs (OPACS), ERIC, and electronic reference resources. Graduate students will have additional course requirements.

### **417 (2-3) Materials for Children**

Print, audiovisual and electronic media: their selection, evaluation, and use with children in grades K-6. 3 credit section includes storytelling. Graduate students will have additional course requirements.

### **418 (3) Materials for Young Adults**

An overview of resources for young adults in relation to their characteristics, information needs interests and abilities, emphasizing gender-fair and multicultural resources and the attitudes, interests, problems, and opportunities of adolescents and young adults in contemporary society. Additionally, the courses will focus on reading, discussing, selecting, and evaluating resources in the context of adolescent development and curricular issues and trends. Graduate students will have additional course requirements.

### **419 Evaluation and Selection**

Evaluating and selecting print, audiovisual, and electronic resources using established principles of selection and applying predetermined criteria. Course includes issues and principles of intellectual freedom and copyright. Graduate students will have additional course requirements.

### **420 (3) Planning, Instruction, and Evaluation in the Secondary School**

Analysis of strategies/techniques for short- and long-term planning, instructional models, and assessment of student growth and learning.

### **422 (2) Design and Production of Resources**

Design and production of instructional media for the classroom. Design and production of media for a professional presentation. Basic 35mm color slide and print photography. Utilization of computers in instructional settings. Presentation of designed resources. Graduate students will have additional course requirements.

### **423 (3) Sexist Influence in Human Development**

Examination of issues of gender and sexism in society and education, including focus on the experience of women of color. Graduate students will have additional course requirements.

### **425 (2) Reading and Writing in the Secondary School**

Concepts, objectives, procedures and reading in subject matter field. Graduate students will have additional course requirements.

### **429 (2) Utilization of Internet Resources**

The student will understand the Internet and learn how to utilize Internet resources and apply them to K-12 media programs. Graduate students will have additional course requirements.

### **430 (2) WWW Construction for Educators**

This course will teach professional educators how to design and produce World Wide Web (WWW) pages of their own and how this knowledge can be transferred to the classroom. Graduate students will have additional course requirements.

**441 (2) organization of Information Dewey Decimal Classification system, Introduction to the Library of Congress Classification, Sears and LC Subject Headings, Commercial processing.** Graduate students will have additional course requirements.

### **444 (3) The Social Context of Learning**

Explores the relationship of the school and community as well as the relationships and roles of teacher, student, and the school. Knowledge of the social, historical, philosophical foundations of education, school law, finance and governance, ethics, democracy and multiculturalism is explored. Requires twelve hours of out-of-class clinical experience.

### **450 (4) Human Relations in a Multicultural Society**

Study of interpersonal skills. Motivation, and group skills. Applied to educational settings. Required 18 hours clinical service learning experience (out-of-class). Meets State of Minnesota human relations requirement for teacher licensure. Graduate students will have additional course requirements.

### **451 (1-2) Cultural Diversity Clinical Experience**

Opportunity for "hands-on" learning experience working with students of culturally diverse backgrounds, one-to-one, small group, tutoring, activities supervision and lesson planning, and implementation.  
Pre: KSP 220 or KSP 450

### **460 (2-4) Practicum**

Practical experience set up between faculty, student, and on-site supervisor.

**461 (3) Service-Learning: Theory and Practice**

A focus on service-learning; planning, implementation, evaluation, evaluation and celebration of service-learning as program, activity, class and integration into academic study.

**476 (6) Supplementary Student Teaching, Secondary (Full Semester)**

Student teaching in the secondary school including weekly seminar for K-12 majors.

Pre: Admission to student teaching

Co: KSP 478 and KSP 475

**477 (11) Student Teaching (Full Semester)**

Student teaching in the secondary school including weekly seminar for 5-12 majors.

Pre: KSP 420 and admission to student teaching

Co: KSP 475

**478 (5) Supplementary Student Teaching (Full Semester)**

Student teaching in the elementary school including weekly seminar for K-12 majors.

Pre: Admission to student teaching

Co: KSP 476 and KSP 475

**479 (3) Grant Writing and Program Funding**

Procedures for designing research, writing proposals and requests for grants, contracts and funding from external resources; grant administration. Graduate students will have additional course requirements.

**480 (1-3) Seminar**

In depth study and narrow focus on an educational topic. Students do extended research outside of class and defend their research in class. Graduate students will have additional course requirements.

**483 (1-3) Supervision of Student Teaching**

To assist K-12 classroom teachers in developing their skills for supervising pre-service and student teachers. Graduate students will have additional course requirements.

**486 (1-3) Topics in Environmental Education**

How to develop curriculum for educational purpose. Graduate students will have additional course requirements.

**489 (1-3) Selected Topics**

Specific focus on an educational topic that may be taught as a regular course such as: Topic: Web Resources for the Classroom (usually a group requests a specific topic.) Graduate students will have additional course requirements.

**490 (1-3) Workshop**

Specific focus on an educational topic that is conducted for a special group. Graduate students will have additional course requirements.

**491 (1-4) In-Service**

Specific course designed to meet changing educational trends. Graduate students will have additional course requirements.

**497 (1-4) Internship**

On-the-job training. Work is jointly supervised by the academic unit and the cooperating institution.

**499 (1-6) Individual Study**

Student and faculty agree upon a specific unit of study.

Student presents unit to faculty member for evaluation.

**Social Studies**

*College of Social & Behavioral Sciences*

*Department of Social Studies*

114 Armstrong Hall • 507-389-5718

Web site: [www.mnsu.edu/dept/sost/](http://www.mnsu.edu/dept/sost/)

Coordinator: Clark Johnson

The social studies program is designed to prepare students to teach secondary social studies. This challenging program draws upon faculty from nine areas (anthropology, economics, ethnic studies, geography, history, political science, psychology, sociology and women's studies) and works with the College of Education to promote effective teaching practice for future and in-service teachers.

A non-teaching major in social studies is also offered, and provides the student an opportunity to create a program to meet her or his personal academic needs.

**Admission to Major** is granted by the program. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

Contact the social studies coordinator for application procedures.

**Admission to the Social Studies Program.** Students enrolling in SOST 450 must be admitted to the social studies program, a process in addition to admission to the major. Admission to the Social Studies (teaching) program is limited. Preference for admission to the program is given to students who have a 3.0 GPA and who have had significant global, multicultural, civic, and community service experience. Students are encouraged to work closely with their advisor to prepare for admission to the social studies program.

**SOCIAL STUDIES BS TEACHING (65 credits)**

**Required for Major (Core, 50 credits):**

ANTH 101	Introduction to Anthropology (3)
ECON 201	Principles of Macroeconomics (3)
ECON 429	Economic Education (3)
GEOG 100	Elements of Geography (3)
GEOG 340	United States (3)
HIST 260	Nature of History (4)
HIST 301	Readings in United States History (4)
HIST 302	Readings in World History (4)
POL 111	United States Government (3)
POL 381	Citizenship (2, 2)
PSYC 101	Introduction to Psychology (4)
SOC 101	Introduction to Sociology (3)

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## Social Studies

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SOST 200 Introduction to Social Studies (2)

SOST 450 Teaching Social Studies in the  
Secondary School (4)

Choose one of the following courses:

WOST 220 Perspectives on Women and Change (3)

ETHN 410 Foundations of Oppression (3)

### Required for Major (Options, 15 credits):

Select one of the following options.

#### ANTHROPOLOGY OPTION

Select one course from the following:

ANTH 220 ANTH 230 ANTH 240

Select 12 credits of upper-division anthropology electives:

ANTH 300/400 Level

ANTH 300/400 Level

ANTH 300/400 Level

ANTH 300/400 Level

Contact Winifred Mitchell, Anthropology Department.

#### ECONOMICS OPTION

Required Courses:

ECON 202 ECON 314 ECON 406

ECON 412 ECON 420

Contact Ashok Chowdhury, Economics Department

#### GEOGRAPHY OPTION

Required Courses:

GEOG 101 GEOG 103

Choose one Cultural-Systematic from the following:

GEOG 425 GEOG 435 GEOG 437

Choose one Physical-Systematic from the following:

GEOG 313 GEOG 315 GEOG 217

GEOG 410 GEOG 420

Choose one Foreign Regional from the following:

GEOG 445 GEOG 450 GEOG 454

GEOG 456 GEOG 458

Contact Jose Lopez, Geography Department

#### HISTORY OPTION

Choose 15 credits of upper division history courses; including at least one course at the 400 level from each of the following areas: Europe, Third World (i.e., Latin America, Middle East, Asia and Africa) and the United States.

Contact Ernie Grieshaber, Department of History.

#### POLITICAL SCIENCE OPTION

Required Courses:

POL 371 POL 414

POL 431 POL 473

Choose 3 credits of independent study or

Choose one of the following:

POL 341 POL 342 POL 433

POL 441 POL 442 POL 443

Contact Joe Kunkel, Political Science Department

#### PSYCHOLOGY OPTION

Required Courses:

PSYC 207

Choose 11 credits of upper division psychology courses:

PSYC xxx PSYC xxx PSYC xxx PSYC xxx

Contact Rosemary Krawczyk, Psychology Department

#### SOCIOLOGY OPTION

Choose one course from each of the five areas:

Sociological Theory:

SOC 456 SOC 457 SOC 458

Methods:

SOC 201 SOC 469 SOC 479

SOC 480

Level of Focus: Micro/Macro:

SOC 351 SOC 352 SOC 401

SOC 407 SOC 423 SOC 461

Family:

SOC 408 SOC 409 SOC 411

SOC 483

Social Issues:

SOC 255 SOC 307 SOC 425

SOC 441 SOC 446 SOC 463

SOC 482

Contact Kim Greer, Sociology Department

### Required for Major (Professional Education, 30 credits):

See the SECONDARY EDUCATION section for admission requirements to Professional Education and a list of required professional education courses.

### Required Minor: None.

### SOCIAL STUDIES BS (50 credits)

### Required for Major (Social Studies Concentration, 24 credits):

A minimum of 24 credits (of which 15 need to be upper division) must be taken in one of the following social studies areas: anthropology, economics, ethnic studies, geography, history, political science, psychology, sociology, or women's studies. Students taking the history option are required to take HIST 260 and at least six credits from each of the following areas: Europe, Third World (i.e., Latin America, Middle East, Asia and Africa) and United States.

### Required for Major (General Social Studies, 26 credits):

A minimum of 26 credits (of which 16 need to be upper division) must be taken on a widely distributed basis from the social sciences and history outside the area of concentration selected above and/or from the interdisciplinary programs of ethnic studies, urban studies or women's studies. Students are encouraged to take a mixture of courses that reflect a global and multicultural understanding.

### Required Minor: None.

Students should enroll in SOST 299, independent study, in the subsequent semester to declaring the social studies non-teaching major. Students in SOST 299 will work with the social studies coordinator to define personal learning goals and objectives and begin the development of a personal learning portfolio. In the senior year, the student will take SOST 499. Students in SOST 499 will complete their learning portfolio under the guidance of the social studies coordinator.



## POLICIES/INFORMATION

**GPA Policy.** A grade of “C” or better is required in all courses in the major.

**P/N Grading Policy.** No more than 12 credits may be taken P/N.

## COURSE DESCRIPTIONS

### 199 (2-5) CLEP Social Studies

#### 200 (2) Introduction to Social Studies

Acquaints students majoring in social studies (teaching) with the social studies major and fundamental ideas that will help students integrate what they are learning in social sciences and history within the context of secondary social studies classroom.

Pre: KSP 210 or concurrently F

### 299 (1-6) Independent Study

#### 450 (4) Teaching Social Studies in the Secondary School

Organization and presentation of social studies in secondary schools. Preparation of units for teaching purposes, examination of materials useful to the social studies teacher. Application of national and state standards to teaching social studies.

Pre: Concurrently with KSP 420 F, S

### 485 (1-6) Topics

Designed to provide students the opportunity to explore a variety of topics related to social studies.

### 491 (1-6) Inservice

Designed to provide students the opportunity to integrate academic learning with professional practice.

### 499 (1-8) Individual Study

## Social Work

*College of Social & Behavioral Sciences*

*Department of Social Work*

358 Trafton Science Center N • 507-389-6504

Web site: [www.mnsu.edu/dept/socialwk/swhp.html](http://www.mnsu.edu/dept/socialwk/swhp.html)

Chair: William A. Anderson

William A. Anderson, Chris Black-Hughes, Nancy Fitzsimons-Cova, Marilyn Frank, Debra Gohagan

This major is preparation for beginning-level generalist social work practice. The program is accredited for baccalaureate level education by the Council on Social Work Education. This major is also excellent preparation for graduate work in social work and related fields. This accredited major meets one of the requirements for social work licensure, which is required to practice social work in most settings in Minnesota.

Students should request that they be assigned to a social work advisor as early as possible. Admission to the major is not necessary for enrollment in 100 and 200 level

courses. Formal admission to the practice sequence (SOWK 314, 443, 445, 411 and 418) occurs during the first semester of the student’s junior year. An application for admission is required. To be eligible for admission at that time, students must have a 2.8 GPA and a minimum grade of “C” in all required courses.

## SOCIAL WORK BS

### Required General Education (Supporting, 19 credits):

SOC 101 Introduction to Sociology (3)  
ETHN 100 American Racial Minorities (3)  
BIOL 100 Our Natural World (4)  
KSP 235 Human Development (3)  
ECON 100 An Introduction to the U.S. Economy (3)  
POL 111 United States Government (3)

3 Credits of Statistics, chosen from:

### Required statistics, support courses (3-4 credits):

SOC 202 or HLTH 475 or PSYC 201 (4 credits)

### Required for Major (Core, 52 credits):

SOWK 190 Social Welfare Services (3)  
SOWK 210 Introduction to Social Work I (3)  
SOWK 214 Community Social Services Projects (3)  
SOWK 305 Human Behavior in Social Work Practice (3)  
SOWK 312 Introduction to Field Practice (5)  
SOWK 314 Social Work Practice I (4)  
SOWK 411 Social Work Practicum Seminar (2)  
SOWK 412 Social Welfare Issues and Policies (3)  
SOWK 418 Practicum (10)  
SOWK 443 Social Work Practice II (4)  
SOWK 445 Social Work Practice III (4)  
SOWK 469 Applied Social Work Research (3)  
SOWK 495 Senior Paper (2)  
Choose one of the following:  
SOWK 312 Social Work Aging  
SOWK 415 Child and Family Welfare Services (3)  
SOWK 419 Social Work and Aging (3)  
SOWK 420 Women’s Issues in Social Work (3)  
SOWK 425 Social Work in Health Care Settings (3)  
SOWK 430 School Social Work (3)

**Required Minor: None.**

## SOCIAL WELFARE MINOR

### Required for Minor (21 credits):

SOWK 190 Social Welfare Services (3)  
SOWK 210 Introduction to Social Work I (3)  
SOWK 214 Community Social Service Projects (3)  
SOWK 305 Human Behavior in Social Work Practice (3)  
SOWK 412 Social Welfare Issues and Policies (3)  
SOWK xxx (approved by social work advisor) (3)  
SOWK xxx (approved by social work advisor) (3)

## POLICIES/INFORMATION

**GPA Policy.** Formal admission to the Social Work major requires that applicants have achieved a 2.8 GPA in the required pre-major courses, including those taken in other departments, and a 2.8 cumulative GPA. A minimum grade of “C” is required in Social Work and supporting

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## Social Work

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courses. Under some circumstances evidence of explanatory factors, strong academic performance in recent semesters and good results in courses within the major.

Once formally admitted, students are expected to demonstrate continued academic performance. No formal additional requirements are applied to acceptance for practicum in the final semester, other than successful completion of course requirements, including Introduction to Field Practice and Senior Paper.

**P/N Grading Policy.** SOWK 312 (Introduction to Field Practice, taken in the Junior Year) and SOWK 411 and 418 (Practicum and Practicum Seminar, taken in the Senior Year), are offered only on a P/N basis. All other required major and pre-major courses must be taken for credit and must be passed with a minimum grade of C.

**Residency and Transfer Requirements.** Transfer students are expected to complete a minimum of 30 credit hours at Minnesota State University, Mankato. Students who wish to transfer credits in Social Work from another university must have been honorably dismissed from the previous school(s). Students transferring Social Work credits must complete at least 24 credits from within the department.

Credit for classroom courses in Social Work taken at other institutions will be evaluated on an individual basis by the student's faculty advisor or by the department chairperson. The student will be expected to present course syllabi including assignments and texts used. All transfer students must see a department advisor for guidance and transcript evaluation before attempting to register for upper division courses.

**Criminal Background Check.** A criminal background check may be required prior to admission.

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### COURSE DESCRIPTIONS

#### **190 (3) Social Welfare Services**

Welfare as a social institution. Formal and informal efforts to meet common social needs. F, S

#### **210 (3) Introduction to Social Work I**

An introduction to social work as a profession (values, ethics, areas of practice, and the curriculum). F, S

#### **214 (3) Community Social Service Projects**

An experiential introduction to the problem solving process in social work, task groups and group development. Students work in small groups to design, research, implement, and evaluate a community social service project. Pre: SOWK 190 and 210 F, S

#### **255 (3) Global Responses to Human Need**

This course exposes students to some of the major realities of life among the poor and socially deprived in all parts of the world, primarily developing countries. Students will confront conditions that impede development and keep people locked into poverty and despair, and will discuss how a person who sees her/himself as a global citizen can act in tangible ways to make that "citizenship" more meaningful. F, S

#### **291 (1-3) Exploratory Studies**

Under faculty mentorship, students can pursue subjects of individual interest related to social work and social welfare. F, S

#### **305 (3) Human Behavior in Social Work Practice**

A systematic overview and integration of the diverse factors which influence behavior and create the context for social work practice.

Pre: SOWK 190, 210, 214, and social work supporting courses: SOC 101, ETHN 100, EDFN 235, BIOL 100 F, S

#### **312 (5) Introduction to Field Practice**

Beginning level supervised field experience with a human service agency. Students complete 150 hours of observation and agency service and attend a seminar which integrates the field experience and social work values, knowledge, and practice skills. Application required during semester before registration.

Pre: SOWK 190, 210, 214, and permission F, S

#### **314 (4) Social Work Practice I**

Overview of generalist social work practice including assessment and intervention methodology and strategies; social work with diverse populations; ethical issues/dilemmas; importance of social work research. Application required during semester before registration.

Pre: SOWK 190, 210, 214, 305, 312, and permission F, S

#### **411 (2) Social Work Practicum Seminar**

Integration of field experience with academic content and concepts. Taken with 418 and 445.

Pre: SOWK foundation, 443, 495, and permission F, S

#### **412 (3) Social Welfare Issues and Policies**

Theoretical and practical exploration of the interrelatedness of social services, social policy formation and analysis, and social work practice.

Pre: ECON 100 & POL 111 F, S

#### **415 (3) Child & Family Welfare Services**

Social services designed to facilitate child development and family functioning. F, S

#### **418 (10) Practicum**

Pre: SOWK 443, 495, and permission F, S

#### **419 (3) Social Work & Aging**

Issues, resources, and processes in working with the elderly and their families in the social service system. V

#### **420 (3) Women's Issues in Social Work**

Women's concerns as clients and workers in the social service system. V

#### **425 (3) Social Work in Health Care Settings**

Service delivery issues and skills for working in hospitals, nursing homes, and community programs. F

#### **430 (3) School Social Work**

Service delivery issues, knowledge and skills for providing social services within school services. S

## Sociology

### 443 (4) Social Work Practice II

Intervention skills for working with individuals, families, and groups.

Pre: SOWK 314 and permission F, S

### 445 (4) Social Work Practice III

Intervention skills for working with organizations and communities. Taken with SOWK 411 and 418.

Pre: SOWK 443 and permission F, S

### 465 (3) Analyzing the Small Community

Community study, application of research techniques; student-conducted research and analysis using a community setting. V

### 469 (3) Applied Social Work Research

Research issues and techniques, needs assessment, program and practice evaluation. F, S

### 485 (1-6) Selected Topics

Topics announced when offered V

### 490 (1-3) Workshop

### 492 (1-3) Honors Reading

### 495 (2) Senior Paper

Required senior capstone experience. Taken with SOWK 443.

Pre: SOWK 314 F, S

### 497 (1-10) Internship

Additional field experience in approved social agency.

### 499 (1-6) Individual Study

Under faculty mentorship, students may pursue in-depth library or field research on topics of their choice.

## Sociology

*College of Social & Behavioral Sciences*

*Department of Sociology & Corrections*

113 Armstrong Hall • 507-389-1561

Web site: [www.mnsu.edu/dept/soccor/web/sc.html](http://www.mnsu.edu/dept/soccor/web/sc.html)

Chair: William Wagner

Afroza Anwary, Steven Buechler, Barbara Carson, Joe W. Davis, W. Roy DeMaree, Kristine Emple, H. Diane Graham, Kim Greer, Barbara Keating, Leland McCormick, Robert Redhead, James Robertson, Thomas Schmid, Pedro Thomas, Steve Vassar, William Wagner

Sociology is the scientific study of contemporary society, social structures, human social behavior, and the organization and functioning of groups.

The Department of Sociology operates under a mission statement that calls for shared faculty and student responsibility for the pursuit, transmission and application of sociological knowledge. Copies of the mission statement and specific academic goals are available through the Department office. As part of this shared responsibility, students majoring in Sociology are expected to integrate the various facets of their education through a series of reflexive essays and other contributions to a student portfolio.

The Sociology major is designed to provide a comprehensive undergraduate education in Sociology. It is appropriate for students who wish to use sociological knowledge and skills in a variety of settings, for liberal arts students with an interest in Sociology and for students who wish to prepare for graduate education in Sociology. Departmental requirements for BA and BS are identical.

**Admission to Major** is granted by the department. Minimum University admission requirements are:  
- a minimum of 32 earned semester credit hours.  
- a minimum cumulative GPA of 2.00 (C).

### SOCIOLOGY BA, BS

#### Required General Education (3 credits):

SOC 101 Introduction to Sociology (3)

#### Required for Major (27 credits):

SOC 200 Foundations of Sociology (3)

SOC 201 Social Research I (3)

SOC 202 Introduction to Social Statistics (3)

SOC 351 Social Psychology (3)

SOC 457 Classical Sociological Theory (3)

SOC 458 Contemporary Sociological Theory (3)

SOC 463 Social Stratification (3)

SOC 495 Senior Seminar (3)

And one of the following:

SOC 469 Survey Research (3)

SOC 479 Sociological Ethnography (3)

SOC 480 Social Observation (3)

#### Required for Major (Electives, 12 credits):

Choose 12 credits with the approval of an advisor.

SOC 300/400 Level SOC 300/400 Level

SOC 300/400 Level SOC 300/400 Level

#### Required for Bachelor of Arts (BA) degree ONLY:

Language (8)

#### Required Minor. Yes.

### SOCIOLOGY BA, BS MINOR

#### Required for Minor (6 credits):

SOC 101 Introduction to Sociology (3)

SOC 102 Introduction to Social Thought (3)

#### Required Electives (15 credits):

At least 12 credits must be at the 300-400 level.

SOC Any Level

SOC 300-400 Level

SOC 300-400 Level

SOC 300-400 Level

SOC 300-400 Level

### POLICIES/INFORMATION

**GPA Policy.** A minimum grade-point average of 2.0 is required for all coursework in the major. A minimum cumulative grade-point average of 2.0 is required for graduation. In addition, students must earn a minimum grade-point average of 2.5 for courses taken in the major to be eligible for field practice or internship.

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## Sociology

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**P/N Grading Policy.** Courses leading to a major or minor in sociology may not be taken on a P/N basis, except where P/N grading is mandatory.

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### COURSE DESCRIPTIONS

#### **100 (3) Social Problems**

A critical description and analysis of selected social problems, with an emphasis on the sociological perspective, critical thinking, roots of group inequality, and exploration of solutions and alternatives to existing social problems. F, S

#### **101 (3) Introduction To Sociology**

Overview of the nature and characteristics of human societies; the structure and processes of social life; impact of social forces on individuals and groups; interdependence of society and the individual; emphasis on cultural diversity and globalism. F, S

#### **102 (3) Introduction To Social Thought**

An exploration of the ideas and theories of major social thinkers of the twentieth century. F, S

#### **200 (3) Foundations Of Sociology**

Elements of the sociological perspective; overview of theoretical and methodological orientations; sociological practice and application; initial development of student portfolio. F, S

Pre: SOC 101

#### **201 (3) Social Research I**

Fundamentals of research methods focusing on the research process and research design and including hypothesis testing, basic analysis and interpretation; students will develop and practice research skills. F, S

Pre: SOC 101

#### **202 (3) Introduction To Social Statistics**

Basic descriptive and inferential statistics used in the analysis of sociological data. F, S

Pre: SOC 101

#### **208 (3) Courtship, Marriage And The Family**

Social processes and structures of courtship, marriage, and family; relationships between society, culture, family systems, families and individuals. F, S

#### **209 (3) Human Sexuality**

The psycho-social-sexual development of the individual with emphasis on developing and maintaining meaningful, enjoyable, and responsible sexual relationships throughout life. Explores cultural, religious, and societal influences on sexual values and behaviors. V

#### **240 (3) Rural Studies**

Students will explore some of the major variables that impact the lives of rural populations. Emphasis will be placed on understanding the diversity in experiences and history in both national and international rural communities, as well as on understanding which public policies can maximize the success of rural environments. F or S

#### **255 (3) Juvenile Delinquency**

A critical consideration of definitions of juvenile delinquency, emphasis on micro and macro level of struggle in which delinquent behavior takes place, critique of current theories on delinquency, and the juvenile justice response to delinquency. F, S

Pre: SOC 101

#### **291 (1-3) Exploratory Studies**

May be used to explore areas of interest to students which are not covered in regular courses. A maximum of three hours applicable toward a major or minor in the department with consent of an advisor. F, S

Pre: Consent

#### **307 (3) Sex And Gender In Contemporary Society**

Description and analysis of sex/gender systems, interpersonal power, language and communication, the role of gender in social institutions such as the family, work, and politics, and the role of social movements in creating change in gender relations. V

Pre: SOC 101

#### **351 (3) Social Psychology**

The study of symbolic interaction as the basis of the mind, the self, and society. F, S

Pre: SOC 101

#### **352 (3) Humanistic Sociology**

An examination of the relationships between society and the myths and illusions expressed in art and the humanities as socially constructed realities and reified symbols. S

Pre: SOC 101

#### **401 (3) American Society: A Comparative Analysis**

A comparative view of American Society, comparing and contrasting social, cultural, and demographic aspects of life in the United States across regions and states. V

Pre: SOC 101

#### **404 (3) Sociology Of Aging**

Social and social-psychological focus in later life. Problems and prospects of growing old in the United States. V

Pre: SOC 101

#### **405 (3) Sociology Of Death**

Study of the structure of human response to death, dying, and bereavement in their socio-cultural, interpersonal, and personal context. Formation of children's perception of death, functions of the funeral, euthanasia, and suicide are among the topics to be discussed. F

Pre: SOC 101

#### **407 (3) Population Dynamics**

The course will acquaint students with dynamic forces operating in the field of population and development. Includes an introduction to basic theories and techniques of population analysis, with coverage of global economic forces: fertility, mortality, and migration. The causes and consequences of over-population are discussed with special attention to resource depletion and food shortages. S

Pre: SOC 101

**408 (3) Family Life Dynamics**

An overview and analysis of major aspects and issues facing the American family, including cohabitation, mate selection, parenting, and changes in marriage, family and sex role dynamics. Ethnicity, race, social class, and cultural aspects of family are highlighted.

Pre: SOC 101 F, S

**409 (3) Family Violence**

Various forms of family violence including dating violence, spouse abuse, and child abuse; social theory, empirical research on and social policy on family violence; social context, responses and solutions.

F

**411 (3) The Family Across Cultures**

Utilizes the comparative perspective to examine marriage and family in numerous international cultures. Focuses upon similarities and differences across cultures and how different family systems deal with universal aspects of family.

Pre: SOC 101 V

**417 (3) Program Administration**

Implications of sociological knowledge for the administration of Human Services programs. Theoretical and practical aspects of administration within social service systems.

S

**423 (3) Complex Organizations**

Analysis of the development, structure, and functioning of social processes in large-scale, formal organizations.

Pre: SOC 101 or 102 V

**425 (3) Social Movements**

Survey of major sociological perspectives on social movements, including theoretical approaches and empirical research on the causes, processes, and outcomes of social movements.

Pre: SOC 101 S

**430 (3) Sociology Of Capitalism**

Overview of the political economy of the United States as an advanced capitalist society with a focus on economic and political inequality, the class structure, the labor process, race and gender relations, the welfare state, the global dimensions of capitalism, and modern crisis tendencies.

Pre: SOC 101 V

**435 (3) Marital Conflict: Causes And Consequences**

Socio-cultural and interpersonal factors contributing to marital conflict and separation; consequences for spouses and children; effective conflict resolution; single parenting; remarriage and step-parenting; legal and social resources.

Pre: SOC 101 S

**441 (3) Social Deviance**

Sociological perspectives on social deviance; overview of theoretical approaches; emphasis on symbolic interactionism; issues of social control; research examples and policy implications.

Pre: SOC 101 F, S

**442 (3) Criminology**

A critical consideration of myths concerning crime, per-

spectives on crime and their assumptions, current criminology theory, and construction of alternative explanations related to crime.

Pre: SOC 101 F, S

**446 (3) Race, Culture, & Ethnicity**

Study of minority racial and cultural groups in U.S. society. An examination of how the lives of the members of these groups are affected by racism, prejudice, and discrimination.

Pre: SOC 101 F

**456 (3) The History Of Social Thought**

A survey of ideas about the nature of society from the past to the present.

Pre: SOC 101 F

**457 (3) Classical Sociological Theory**

A study of the 18th century forerunners and the 19th century founders of sociology.

Pre: SOC 101 F

**458 (3) Contemporary Sociological Theory**

An overview of modern sociological theories, including functionalism, conflict theory, symbolic interactionism, rational choice theory, phenomenological sociology, and recent trends in theoretical developments.

Pre: SOC 101 S

**461 (3) Urban Sociology**

A survey of sociological theory and research on the ecology, demography, and social organization of the urban community. Presents a sociological interpretation of the development of urban society and how the process of urbanization affects the basic societal institutions and individual behavior.

Pre: SOC 101 S

**463 (3) Social Stratification**

Class, social status, and power inequalities are examined at the world, national, and community level. Different theories of structured social inequality, class conflict, and political decision-making are discussed. The emergence of a solidified "caste" (rigid and unchanging system of inequality) of elites is hypothesized in contrast to an amorphous, powerless mass.

Pre: SOC 101 S

**465 (3) Law And Chemical Dependency**

Addresses aspects of criminal and civil law pertinent to substance abuse.

F

**466 (3) Program Planning**

Theoretical and practical aspects of the planning process within social service systems. Examines the social context of planning and the use of a sociological knowledge base for planning in Human Services.

Pre: SOC 101 S

**469 (3) Survey Research**

Techniques of survey research, interview, and questionnaire construction, field administration, and sampling methodology.

F



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## Sociology

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### 470 (3) Sociology of Parent-Child Interaction

Parent-child relationships in societal context; socialization theories; classic and contemporary research; parenting applications; current issues. S

### 479 (3) Sociological Ethnography

Exploration of the methodological and theoretical issues in sociological ethnography; examination of ethnic, deviant, and other constructed social worlds and the means by which sociologists study these worlds.

Pre: SOC 101 S

### 480 (3) Social Observation

Participant observation, focused interviews, and qualitative analysis; students actively participate in a field research project.

Pre: SOC 101 F

### 482 (3) Social Change

Analysis of social forces and processes involved in changing norms, values, and structures in traditional and modern societies. Examines both planned and unplanned change.

Pre: SOC 101 or 102 F

### 483 (3) The Family: A Sociological Analysis

Theory development and research findings about family systems with a special emphasis on societal influences (social, economic, political) on the changing family. F

### 484 (3) Sociology Of Religion

Analysis of the structures, functions, and origins of religion, its relationship to other social institutions, and its role in modern secular society. Examines processes of individual religiosity and explores current religious movements and trends.

Pre: SOC 101 S

### 485 (2-6) Selected Topics

Topics vary as announced in class schedule. May be retaken for credit if topic varies.

Pre: SOC 101 V

### 486 (3) Modifying Behavior In Social Settings

Principles and techniques of changing people's behavior in social, group, and agency environments.

Pre: SOC 101 F, S

### 490 (1-3) Workshop

Workshop topics vary as announced in class schedule. May be retaken for credit. V

### 491 (1-6) In-Service

Topics vary as arranged by students and instructor. May be retaken for credit. V

### 492 (1) Reading For Honors

For Honors students only. V

### 495 (3) Senior Seminar

Review of central ideas, concepts, and controversies in sociology; detailed examination of the sociological perspective and its implications for vocational or other social action; preparation of integrative essay based on portfolio materi-

als. Students must have completed or be currently enrolled in all other required courses for the sociology major.

Pre: SOC 200 F, S

### 497 (1-12) Internship In Sociology

The internship in sociology is designed to provide opportunity to apply classroom learning, to practice and enhance skills, to experience professional socialization, and to explore a career. It also serves as a vehicle for the student to become more aware of personal strengths and identify areas in which further growth is needed.

Pre: Consent F, S

### 499 (1-6) Individual Study

A maximum of six credits is applicable toward a single major in the department; three credits toward a minor.

Pre: Consent F, S

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## Spanish

*College of Arts & Humanities*

*Department of Modern Languages*

227 Armstrong Hall • 507-389-2116

Web site: [www.mnsu.edu/dept/modernlang/Welcome.html](http://www.mnsu.edu/dept/modernlang/Welcome.html)

Chair: Kimberly Contag

James A. Grabowska, Karl H. Heise, Patricia Longwell-Wera, Enrique Torner

Education in the Spanish language provides insight into the literature and culture of Spain, Mexico and the Spanish speaking countries of the Caribbean and Central and South America. It also gives students a knowledge of language that enables them to work and travel in areas where the target language is used. To facilitate these goals, the department has sponsored a study abroad program in Mexico since 1973. Students who choose to take advantage of this program, or of other accredited study abroad experiences in Spanish speaking countries, may receive credit if departmental approval is obtained in advance. Study abroad meets the state-mandated requirement for first-hand experience with target cultures for the B.S., T. Study abroad is highly recommended for all majors and minors.

**Admission to Major** is granted by the department.

Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

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### SPANISH BA, BS (36 credits)

#### **Required for Major:**

Elementary and intermediate Spanish or other proof of skill is needed.

#### **Required for Major (24 credits):**

SPAN 365 Selected Readings (1-4)

Choose at least two of the following:

SPAN 355 Spanish Civilization (1-4)

SPAN 356 Latin American Civilization (1-4)

SPAN 496 Supervised Study: Themes in Hispanic Culture (1-6)

- Choose at least one of the following:
- SPAN 301 Topics in Language (1-4)
  - SPAN 310 Advanced Conversation and Composition (1-4)
  - SPAN 393 Supervised Study in Spanish Speaking Foreign Countries: Advanced Spanish (1-6)
  - SPAN 394 Supervised Study in Mexico: Advanced Spanish (1-6)
  - SPAN 401 Topics in Linguistics (1-4)
  - SPAN 493 Supervised Study in Spanish Speaking Foreign Countries (1-6)

- Choose at least one of the following:
- SPAN 402 Topics in Spanish Peninsular Literature (1-4)
  - SPAN 495 Supervised Study: Themes in Hispanic Literature (1-6)

- Choose at least one of the following:
- SPAN 403 Topics in Spanish American Literature (1-4)
  - SPAN 494 Supervised Study in Mexico: Themes in Spanish American Literature (1-6)

**Required for Major (Electives, 12 credits)**

Choose electives from approved list at the end of this section.

**Required Minor: Yes. Any.**

**SPANISH BS, TEACHING (44 credits)**

**Required for Major:**

Elementary and intermediate Spanish or other proof of skill is needed.

**Required for Major (24 credits):**

- MODL 460 Methods of Teaching Modern Languages (3)
- MODL 461 Applied Modern Language Teaching Methods (1)
- MODL 462 Foreign Language Elementary School Methods (3)
- MODL 463 Applied Foreign Language Elementary School Methods (1)
- SPAN 365 Selected Readings (1-4)
- Choose at least two of the following:
- SPAN 355 Spanish Civilization (1-4)
- SPAN 356 Latin American Civilization (1-4)
- SPAN 496 Supervised Study: Themes in Hispanic Culture (1-6)

- Choose at least one of the following:
- SPAN 301 Topics in Language (1-4)
  - SPAN 310 Advanced Conversation and Composition (1-4)
  - SPAN 394 Supervised Study in Spanish Speaking Foreign Countries: Advanced Spanish (1-6)
  - SPAN 394 Supervised Study in Mexico: Advanced Spanish (1-6)
  - SPAN 401 Topics in Linguistics (1-4)
  - SPAN 493 Supervised Study in Spanish Speaking Foreign Countries (1-6)
- Choose at least one of the following:
- SPAN 402 Topics in Spanish Peninsular Literature (1-4)

- SPAN 495 Supervised Study: Themes in Hispanic Literature (1-6)

Choose one at least of the following:

- SPAN 403 Topics in Spanish American Literature (1-4)
- SPAN 494 Supervised Study in Mexico: Themes in Spanish American Literature (1-6)

**Required for Major (Electives, 12 credits)**

Choose electives from approved list at the end of this section.

**Required for the Major:**

Students must "demonstrate Intermediate-high level speaking proficiency as defined in the ACTFL Proficiency Guidelines Established by the American Council on the Teaching of Foreign Languages.

**Required for the Major:**

First-hand experiences with the target cultures.

**Required for Major (Professional Education, 30 credits):**

See the SECONDARY EDUCATION section for admission requirements to Professional Education and a list of required professional education courses.

**Required Minor: None.**

**SPANISH MINOR (24 credits)**

**Required for Minor:**

Elementary and intermediate Spanish or other proof of skill is needed.

**Required for Minor (12 credits):**

- Choose at least two of the following:
- SPAN 355 Spanish Civilization (1-4)
  - SPAN 356 Latin American Civilization (1-4)
  - SPAN 496 Supervised Study: Themes in Hispanic Culture (1-6)

Choose at least one of the following:

- SPAN 301
- SPAN 393
- SPAN 310
- SPAN 394
- SPAN 365
- SPAN 493

**Required for Minor (Electives, 12 credits)**

Choose electives from approved list at the end of this section.

**Approved Elective List:**

SPAN 201	or	SPAN 293
SPAN 202	or	SPAN 294
SPAN 210	SPAN 255	SPAN 256
SPAN 257	SPAN 293	SPAN 294
SPAN 299**	SPAN 301	SPAN 310
SPAN 393	SPAN 394	SPAN 401*
SPAN 402*	SPAN 403*	SPAN 493*
SPAN 494*	SPAN 492	SPAN 495*
SPAN 496	SPAN 497	SPAN 499

\*may be repeated if different topic

\*\*up to 6 credits may be used toward the major or minor.

**POLICIES/INFORMATION**

**GPA Policy.** A grade of C or better must be earned for major or minor credit.

**P/N Grading Policy.** Work done for a major or minor must be done for a letter grade above the second-year

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## Spanish

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level. A grade of P must be earned for major or minor credit in all work done on a P/N basis.

**Proficiency Policies.** Students with high school language experience may take the CLEP test for a maximum of 12 credits. Students who wish to receive credit by examination may take tests to have their proficiency evaluated. Students may not take a proficiency test for a course in which they are enrolled. Students who have any previous Spanish experience or instruction must take the computerized Spanish Placement Test in the Academic Computer Center and/or see a Spanish faculty member for placement advice before enrolling in a Spanish course at an appropriate proficiency level. The department reserves the right to deny admission to courses for those students who a faculty member determines have mastered the material already.

**Fulfilling B. A. Language Requirement.** Students who wish to validate the B.A. language requirement may take a language competency test from the Department of Modern Languages at no cost. If they are evaluated as being proficient, they need not take any more language courses, but they receive no credit. Students will not be considered exempt from the language requirement merely because they have taken two years of high school language.

Students may receive elective credit for fewer than 8 credits of an elementary language sequence, if these are satisfactorily completed. Such credits do not apply toward the 8 credit requirement for the B.A. degree.

**Residency Requirement.** Transfer credits will be applied only if they are the equivalent of work offered by the Department of Modern Languages for the major or minor in that language. In addition, a minimum of work must be taken at Minnesota State University, Mankato as follows. Major: A minimum of three upper division courses other than Independent or Individual Study, for a total of at least 8 credits. At least two of these courses must be at the 400 level. Minor: A minimum of two upper division courses other than Independent or Individual Study, for a total of at least six credits.

Courses not required for a student's specific baccalaureate degree should be chosen according to these general guidelines:

- BA: Emphasis on literature in upper-division courses; students will most likely pursue their education beyond the baccalaureate level.
- BS: Emphasis on the ability to communicate in the language; presupposes knowledge of culture and civilization; students frequently have career goals in other disciplines for which a language is either required or recommended.
- BS (teaching): Emphasis on communication (four skills plus culture and language analysis).

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### COURSE DESCRIPTIONS

#### 101 (4) Elementary Spanish I

An introduction to the basic language skills of listening, speaking, reading and writing; presentation of condensed cultural notes.

#### 102 (4) Elementary Spanish II

An introduction to the basic language skills of listening, speaking, reading and writing; presentation of condensed cultural notes.

Pre: SPAN 101 or equivalent

#### 193 (1-6) Supervised Study in Spanish Speaking Foreign Countries: Elementary Spanish

Introductory work toward proficiency in reading, writing speaking and listening skills. Content varies. May be repeated for credit. Study for credit must be approved by the department prior to departure.

#### 194 (1-6) Supervised Study in Mexico: Elementary Spanish

Introductory work toward proficiency in reading, writing, speaking and listening skills. Content varies. May be repeated for credit. Study for credit must be approved by the department prior to departure.

#### 201 (4) Intermediate Spanish I

A review of the fundamentals of grammar, practice in written and oral expression, development of listening and reading skills, brief cultural components.

Pre: one year university level Spanish or equivalent

#### 202 (4) Intermediate Spanish II

A review of the fundamentals of grammar, practice in written and oral expression, development of listening and reading skills, brief cultural components.

Pre: one year university level Spanish or equivalent

#### 210 (1-4) Composition and Conversation

Designed for students who have completed elementary Spanish or for those who are in the intermediate sequence at the university level or equivalent. Includes basic communication exchanges; common vocabulary and experiences. Emphasis is on improving written expression through compositions related to topics of conversation.

Goal: intermediate level of written and oral proficiency.  
Pre: One year university-level Spanish or equivalent.

#### 255 (1-6) Selected Topics in Cultural Preparation for Study in Spanish-Speaking Foreign Countries

Topics will vary. May be repeated for credit.

#### 256 (1-6) Supervised Study-Travel in Spanish-Speaking Foreign Countries

Topics will vary. May be repeated for credit.

#### 257 (1-6) Cultural Involvement Project in Mexico

Topics will vary. May be repeated for credit. Development of cultural awareness.

Pre: One year university level Spanish or equivalent

#### 293 (1-6) Supervised Study in Spanish-Speaking Foreign Countries: Intermediate Spanish

Development of reading, writing, speaking and listening skills at the intermediate level. Content varies. May be repeated for credit. Study for credit must be approved by the department prior to departure.

Pre: One year university level Spanish or equivalent

**294 (1-6) Supervised Study in Mexico: Intermediate Spanish**

Development of reading, writing, speaking and listening skills at the intermediate level. Content varies. May be repeated for credit. Study for credit must be approved by the department prior to departure.

Pre: One year university level Spanish or equivalent

**299 (1-4) Individual Study**

Variable topics.

**301 (1-4) Topics in Language**

Topics will vary and course may be repeated for credit. Language topics include pronunciation and intonation, advanced grammar, Spanish for the marketplace, etc. The focus is on advanced oral or written communication.

Pre: Two years of university level Spanish or equivalent

**310 (1-4) Advanced Conversation and Composition**

Designed for students who have completed intermediate Spanish at the university level or the equivalent. Course begins with intermediate proficiency level and progresses to advanced level functions, present, past, and future indicative and present subjunctive. Expansion of vocabulary. Goal: Improved level of oral proficiency.

Pre: Two years of university level Spanish or equivalent.

**355 (1-4) Spanish Civilization**

Major cultural and historical aspects of Spain from ancient times to the present.

Pre: Two years university level Spanish or equivalent

**356 (1-4) Latin American Civilization**

Major cultural and historical aspects of Latin America from pre-colonial times to the present.

Pre: Two years university level Spanish or equivalent

**365 (1-4) Selected Readings**

Discussion and analysis of major themes and movements based on selected readings from representative authors from the Spanish speaking world.

Pre: Two years university level Spanish or equivalent

**393 (1-6) Supervised Study in Spanish-Speaking Foreign Countries: Advanced Spanish**

Increase proficiency of reading, writing, speaking and listening skills. Content varies. May be repeated for credit. Study for credit must be approved by the department prior to departure.

Pre: Two years university level Spanish or equivalent

**394 (1-6) Supervised Study in Mexico: Advanced Spanish**

Emphasis is on reading, writing, speaking and listening skills. Content varies. May be repeated for credit. Study for credit must be approved by the department prior to departure.

Pre: Two years university level Spanish or equivalent

**401 (1-4) Topics in Linguistics**

Topics may vary. Course may be repeated for credit. Discussion and analysis of Spanish linguistics (syntax, sociolinguistics, historical linguistics, translation theory and practice.)

Pre: Completion of 4 credits of 300 level or equivalent.

**402 (1-4) Topics in Spanish Peninsular Literature**

Topics vary: Spanish Literature from Medieval to Modern Times. May be repeated for credit.

Pre: Completion of 4 credits of 300 level or equivalent.

**403 (1-4) Topics in Spanish American Literature**

Topics vary: major writers from Spanish America; Spanish American novel; Spanish American poetry; Spanish American drama; Spanish American short story; romanticism, the Mexican novel. May be repeated for credit.

Pre: Completion of 4 credits of 300 level or equivalent.

**492 (1-3) Independent Study**

Variable topics.

Pre: Completion of eight 300-level credits, or equivalent

**493 (1-6) Supervised Study in Spanish Speaking Foreign Countries**

Topics will vary. May be repeated for credit. Study for credit must be approved by the department prior to departure.

Pre: Two years university level Spanish

**494 (1-6) Supervised Study in Mexico: Themes in Spanish American Literature**

Topics will vary. May be repeated for credit. Study for credit must be approved by the department prior to departure.

Pre: Two years university level Spanish

**495 (1-6) Supervised Study: Themes in Hispanic Literature**

Topics will vary. May be repeated for credit.

Pre: Two years university level Spanish

**496 (1-6) Supervised Study: Themes in Hispanic Culture**

Topics will vary. May be repeated for credit.

Pre: Two years university level Spanish

**499 (1-4) Individual Study**

Variable topics.

Pre: completion of eight 300-level credits, or equivalent

MODERN LANGUAGE COURSES FOR BS, T

**Modern Language**

**460 (3) Methods of Teaching Modern Languages**

Introduction to theory and practice of modern language teaching, including lessons in listening, speaking, reading, writing, vocabulary, and culture. Includes testing, program design, lesson planning, and use of technology.

F

**461 (1) Applied Modern Language Teaching Methods**

A field experience including placement in the secondary level school setting for students earning licensure in modern language teaching. Practicum students work with middle or high school students of French, German, or Spanish. Take concurrently with or following MODL 460.

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## Spanish

### 462 (3) Foreign Languages in the Elementary School Methods

Introduction to theory and practice of modern language teaching for children grades K-6, including oral language development, second language literacy development, content-based language instruction, and techniques for language immersion programs.

Pre: Students must demonstrate oral proficiency level of Intermediate-Mid on ACTFL scale in target language before enrolling.

### 463 (1) Applied Foreign Languages in the Elementary School Methods

A field experience including placement in the elementary level school setting for students earning licensure in modern language teaching. Practicum students work with elementary school students in French, German, or Spanish. Take concurrently with or following MODL 462

### 465 (1-3) Workshop in Modern Language Education

Topics in modern language education. May be repeated for credit. V

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## Speech Communication

*College of Arts & Humanities,*

*Department of Speech Communication*

230 Armstrong Hall • 507-389-2213

Web site: [www.mnsu.edu/dept/spcomm/Communications/SpCommHP.html](http://www.mnsu.edu/dept/spcomm/Communications/SpCommHP.html)

Chair: Warren G. Sandmann

Daniel Cronn-Mills, Sheryl Dowlin, Martine Linderman, Patricia Palm, Lisa Perry

Speech Communication is the study of how people generate shared meaning through the use of verbal and non-verbal symbols. Speech Communication majors work to develop confidence and effectiveness in their public speaking, interpersonal, and small group communication skills. The focus is not on preparing students for a specific job, but rather helping students to develop interpersonal, organizational, intercultural, and public presentational skills which will enhance the quality of their lives across a variety of contexts (e.g., within the workplace, family, civic and social situations).

**Admission to Major** is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.20 (C).

Contact the department for application procedures. In addition to the general requirements, a cumulative GPA of 2.2 must be maintained in the courses of the major.

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### SPEECH COMMUNICATION BA, BS

#### Required for Major (15 credits):

- SPEE 101 Interpersonal Communication (3)  
SPEE 102 Public Speaking (3)

- SPEE 190 Introduction to Communication Studies (3)  
SPEE 385 Communication Theory and Research (3)  
SPEE 485 Senior Seminar (3)

#### Required for Major (Electives, 15 credits):

Choose 5 courses from the following:

- |          |          |          |
|----------|----------|----------|
| SPEE 201 | SPEE 202 | SPEE 203 |
| SPEE 220 | SPEE 233 | SPEE 240 |
| SPEE 300 | SPEE 310 | SPEE 315 |
| SPEE 321 | SPEE 325 | SPEE 333 |
| SPEE 400 | SPEE 401 | SPEE 403 |
| SPEE 404 | SPEE 410 | SPEE 412 |
| SPEE 413 | SPEE 430 | SPEE 440 |
| SPEE 445 | SPEE 490 | SPEE 497 |
| SPEE 498 | SPEE 499 |          |

9 of the 15 elective credits must be in upper level classes.

#### Required for Bachelor of Arts (BA) ONLY degree:

Language (8)

#### Required Minor: Yes. Any.

### ENGLISH/SPEECH: TEACHING SPEECH CONCENTRATION

#### Required for Major (Speech Core, 27 credits):

- SPEE 101 Interpersonal Communication (3)  
SPEE 201 Small Group Communication (3)  
SPEE 203 Intercultural Communication (3)  
SPEE 310 Performance of Literature (3)  
SPEE 315 Effective Listening (3)  
SPEE 321 Argumentation and Debate (3)  
SPEE 404 Teaching of Speech Communication (3)  
SPEE 430 Directing Forensic Activities (3)

Choose either:

- SPEE 333 Advanced Public Speaking (3)  
SPEE 220 Forensics (1-3)

#### Required for Major (Electives, 9 credits):

- SPEE 190 Introduction to Communication Studies (3)  
SPEE 202 Nonverbal Communication (3)  
SPEE 220 Forensics (1-3)  
SPEE 240 Special Topics (1-3)  
SPEE 300 Ethics and Free Speech (3)  
SPEE 325 Interviewing (3)  
SPEE 333 Advanced Public Speaking (3)  
SPEE 385 Communication Theory and Research (3)  
SPEE 400 American Public Address (3)  
SPEE 401 Rhetoric of Western Thought (3)  
SPEE 403 Gender and Communication (3)  
SPEE 410 Group Performance of Literature (3)  
SPEE 412 Organizational Communication (3)  
SPEE 413 Advanced Intercultural Communication (3)  
SPEE 440 Special Topics (1-3)  
SPEE 445 Conflict Management (3)  
SPEE 490 Workshop (3)  
SPEE 497 Teaching Internship (3)  
SPEE 498 Internship (3)  
SPEE 499 Individual Study (3)

#### Required for Major (English, 24 credits):

- ENG 275 Intro to Literary Studies (4)



## Speech Communication

ENG 285 Practical Grammar (2)  
 ENG 361 Teaching English in the High School (2)  
 ENG 362 Teaching Literature and Writing (4)  
 ENG 381 Intro to English Linguistics (4)

Choose either:

ENG 463 Adolescent Literature (2)  
 ENG 464 Teaching Literature in the Middle School (3)

Choose either:

ENG 405 Shakespeare: Comedies and Histories (2)  
 ENG 406 Shakespeare: Tragedies (2)

Choose one from:

ENG 320      ENG 321      ENG 327  
 ENG 328

### Required General Education Courses

SPEE 102 Public Speaking (3)  
 MASS 110 Introduction to Mass Communication (3)  
 ENG xxx English Elective (4)

### Required for Major (Professional Education, 30 credits):

See the SECONDARY EDUCATION section for admission requirements to Professional Education and a list of required professional education courses.

### SPEECH COMMUNICATION MINOR

#### Required for Minor (9 credits):

SPEE 101 Interpersonal Communication (3)  
 SPEE 102 Public Speaking (3)  
 SPEE 190 Introduction to Communication Studies (3)

#### Required for Minor (Electives, 9 credits):

Choose up to 9 credits from the Speech department.  
 SPEE xxx    SPEE xxx    SPEE xxx

### POLICIES/INFORMATION

**GPA Policy.** Students must maintain a minimum of 2.2 GPA.

**P/N Grading Policy.** Total credits in the department must not exceed 25 percent P/N for a major or a minor.

**Internships:** Internships are P/N option only.

**Academic Probation Advising:** Refer to the information listed in the College of Arts and Humanities section of the bulletin.

Speech Communication minors may apply no more than 3 credits of SPEE 498 and 3 credits of SPEE 499 to fulfillment of the minor. Additional credits may be applied for graduation requirements. Speech Communication majors may apply no more than 6 credits of SPEE 498 and 3 credits of SPEE 499 to fulfillment of the major. Additional credits may be applied for graduation requirements.

### COURSE DESCRIPTIONS

#### 100 (3) Fundamentals of Speech Communication

A course designed to improve students' understanding in communication, including the areas of interpersonal, nonverbal, listening, small group and public speaking.

#### 101 (3) Interpersonal Communication

A course blending theory and practice to help individuals build effective relationships through improved communication.

#### 102 (3) Public Speaking

A course in communication principles to develop skills in the analysis and presentation of speeches.

#### 190 (3) Introduction to Communication Studies

This course is designed to introduce students to the basic theories, principles, concepts, and research methodologies in the field of communication.

#### 201 (3) Small Group Communication

Development of communication skills for working with others in small group situations.

#### 202 (3) Nonverbal Communication

Investigation of the concepts and theories of nonverbal communication. Designed to assist students in increasing their awareness and understanding of their nonverbal communication and in analyzing and understanding the nonverbal communication of others.

#### 203 (3) Intercultural Communication

The course explores communication with people from other cultures, why misunderstandings occur and how to build clearer and more productive cross-cultural relationships.

#### 220 (1-3) Forensics

Activity course involving participation in intercollegiate speech tournaments. Course can be repeated for credit.

#### 233 (3) Public Speaking for Technical Professionals

This course is designed to introduce and develop the skills and knowledge necessary to create and present effective public communication of technical content for a technical or general audience.

#### 240 (1-3) Special Topics

Special interest courses devoted to specific topics within the field of speech communication. Topics vary, and course may be retaken for credits under different topic headings.

#### 300 (3) Ethics and Free Speech

This course is divided into two sections. First the class explores ethical parameters involved in communication from a variety of social and cultural perspectives. Second, the class investigates current standards and issues involving freedom of speech.

#### 310 (3) Performance of Literature

This course is designed to develop the skills to complete the artistic process of studying literature through performance and sharing that study with an audience.

#### 315 (3) Effective Listening

This course is designed to provide students with skills of effective listening, and the ability to apply that knowledge in a variety of educational and professional settings.

#### 321 (3) Argumentation and Debate

Development of skills in the analysis, application and evaluation of argumentative communication.

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## Speech Communication

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### **325 (3) Interviewing**

This course is designed to prepare students to use communication skills in a variety of interview settings.

### **333 (3) Advanced Public Speaking**

This is an advanced course in public presentation focused on improving presentational skills of speech delivery and language choice.

### **385 (3) Communication Theory and Research**

This course is designed to introduce students to basic theoretical approaches and research methodologies in the discipline of speech communication.

### **400 (3) American Public Address: A Tradition**

Survey of significant American speakers and their speeches from the colonial period to the Twentieth Century.

### **401 (3) Rhetoric of Western Thought**

The course explores the history of rhetoric and communication from the ancient Greeks to the present day. The course is designed for students interested in expanding their understanding of rhetoric as a force in contemporary intellectual, political and academic fields.

### **403 (3) Gender and Communication**

This course is designed to develop an understanding of how gender and communication interact. Students learn the basic theories and principles of communication as it applies to gender and develop skills to enhance communication between and among gender groups.

### **404 (3) Teaching of Speech Communication**

This course is designed to fulfill the Secondary Licensure requirement. The course covers teaching methods and materials needed to develop speech communication units for speech communication courses in grades 5-12.

### **410 Group Performance of Literature (3)**

This course is a performance course. Students will learn the theory and practice of group oral interpretation by engaging in dramatic activities, developing, researching and creating a group oral interpretation script, and presenting a group oral interpretation.

### **412 (3) Organizational Communication**

This course is designed to develop an understanding of speech communication in the organizational context. The course will aid each individual in working more effectively within any type of organization through exposure to major theories and works in the area of organizational communication.

### **413 (3) Advanced Intercultural Communication**

This course is designed for advanced studies dealing with theories and issues raised by both international and domestic intercultural communication.

### **430 (3) Directing Forensic Activity**

Methods and techniques in the development of competitive speech programs in grades 5-12.

### **440 (1-3) Special Topics**

A course designed for students who have a general interest in speech communication. Content of each special topics course will be different. May be retaken for credit.

### **445 (3) Conflict Management**

This theory and research-oriented course examines the relationship between communication and conflict, and is designed to provide students with knowledge and skills in dealing with conflict situations.

### **485 (3) Senior Seminar**

This is a required capstone course of all speech communication majors and involves the completion and presentation of a senior level research project. Teaching majors are excluded from this requirement.

Pre: SPEE 190

### **490 (1-4) Workshop**

Topics vary as announced in class schedules.

### **497 (1-12) Teaching Internship**

First-hand experience in the classroom assisting a faculty member.

### **498 (1-6) Internship**

Provides first-hand experience in applying communication theories in the workplace under the direction of an on-site supervisor.

### **499 (1-3) Individual Study**

Independent study under the supervision of an instructor.

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## Statistics

*College of Science, Engineering, & Technology*

*Department of Mathematics & Statistics*

273 Wissink Hall • 507-389-1453

Web site: [www.mnsu.edu/dept/mathstat/](http://www.mnsu.edu/dept/mathstat/)

Chair: Larry Pearson

Mezbahur Rahman

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Statistics in this department is designed to provide a basic theoretical background for statistical inference and some techniques and practice in applying the theory. Courses in statistics would be useful for anyone as a tool in another area of study or as preparation for more advanced study of statistics.

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### **STATISTICS BA, BS MINOR**

#### **Required for Minor (20-21 credits):**

MATH	121	Calculus I (4)
MATH	122	Calculus II (4)
STAT	354	Concepts of Probability and Statistics (3)
STAT	450	Regression Analysis (3)
STAT	451	Experimental Designs (3)
Choose one course from the following:		
STAT	357	Sample Survey and Design (3)
STAT	358	Categorical Data Analysis (3)
STAT	359	Nonparametric Methods (3)
STAT	455	Theory of Statistics I (4)

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### **POLICIES/INFORMATION**

**GPA Policy.** Statistics minors must earn a grade of C or better in all courses applied to the minor.

## Teaching English As A Second Language (TESL)

**P/N Grading Policy.** All 300- and 400-level courses are offered for grade only with the exception of STAT 498 and 499 which is available for both P/N and letter grade.

**Credit by examination.** Will not be approved for courses in which a student has already received a grade.

**Credit Limitation.** A student may not receive credit for STAT 354 after completing MATH 455 or STAT 455.

### COURSE DESCRIPTIONS

#### 154 (3) Elementary Statistics

Basic descriptive measures of data, elementary probability concepts and their relation to statistical inference, tests of hypotheses and confidence intervals. An appropriate preparation for more advanced statistics courses in any area.

Pre: Three years high school algebra or MATH 098  
F, S

#### 354 (3) Concepts of Probability and Statistics

This is a calculus-based course covering introductory level topics of probability and statistics. It is designed to meet the needs of both the practitioner and the person who plans further in-depth study. Topics include probability, random variables and probability distributions, joint probability distributions, statistical inference (both estimation and hypothesis testing), analysis of variance, regression, and correlation. Same as MATH 354.

Pre: MATH 122  
F, S

#### 357 (3) Sample Survey and Design

Random sampling, systematic sampling methods including stratified random sampling, cluster sampling and two-stage sampling, ratio estimation, regression, and population size estimation.

Pre: elementary STAT course or consent  
ALT-F

#### 358 (3) Categorical Data Analysis

Forms of multivariate analysis for discrete data, two dimensional tables, models of independence, log linear models, estimation of expected values, model selection, higher dimensional tables, logit models and incompleteness.

Pre: elementary STAT course or consent  
ALT-F

#### 359 (3) Nonparametric Methods

Derivation and usage of nonparametric statistical methods, applications in count and rank data, analysis of variance for ranked data, statistical quality control.

Pre: any STAT course  
ALT-S

#### 450 (3) Regression Analysis

Simple and multiple regression, correlation, analysis of variance and covariance.

Pre: MATH/STAT 354 or 455  
ALT-S

#### 451 (3) Experimental Designs

Completely randomized, randomized block, fractional factorial, incomplete block, split-plot, Latin squares, expected mean squares, response surfaces, confounding, fixed effects and random effects models.

Pre: MATH/STAT 354 or 455  
ALT-S

#### 455 (4) Theory of Statistics I

A mathematical approach to statistics with derivation of theoretical results and of basic techniques used in applications. Includes probability, continuous probability distributions, multivariate distributions, functions of random variables, central limit theorem and statistical inference. Same as MATH 455.

Pre: MATH 223  
F

#### 456 (4) Theory of Statistics II

A mathematical approach to statistics with derivation of theoretical results and of basic techniques used in applications, including sufficient statistics, additional statistical inference, theory of statistical tests, inferences about normal models and nonparametric methods. Same as MATH 456.

Pre: MATH/STAT 455  
S

#### 488 (1-3) Seminar

The study of a particular topic primarily based upon recent literature. May be repeated for credit on each new topic.

#### 491 (1-4) In-Service

A course designed to upgrade the qualifications of persons on-the-job. May be repeated for credit on each new topic.

#### 495 (1-4) Selected Topics

A course in an area of statistics not regularly offered. May be repeated for credit on each new topic.

#### 498 (1-12) Internship

Provides a student the opportunity to gain expertise and experience in a special field under the supervision of a qualified person.

#### 499 (1-4) Individual Study

Independent individual study under the guidance and direction of a faculty member. Special arrangements must be made with an appropriate faculty member. May be repeated for credit of each new topic.

## Teaching English As A Second Language (TESL)

*College of Arts & Humanities*

*Department of Modern Languages*

227 Armstrong Hall • 507-389-2116

Chair: Kimberly Contag

Tina Edstam, Patricia Wilcox Peterson, Harry Solo, Steve Stoyloff

The TESL non-licensure program prepares students to teach English as a second language in situations where licensure is not required, such as in Peace Corps schools abroad.

The TESL licensure minor prepares students to teach English as a second language (ESL) in grades K-12. As a free-standing licensure program, it is the fully recognized standard for teaching ESL in Minnesota and need not be upgraded to a major at any time.

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## Teaching English As A Second Language (TESL)

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ESL licensure is also attainable through courses at the graduate level which fulfill program requirements. Further information is available from the department.

### TEACHING ENGLISH AS A SECOND LANGUAGE, NON-LICENSURE MINOR

#### Required for Minor (23 credits):

ENG	381	Introduction to English Linguistics (4)
MODL	470	Theory and Methods of TESL I (4)
MODL	471	Theory and Methods of TESL II (4)
ENG	482	English Phonetics and Grammar for TESL (4)
ENG	485	Language and Culture in TESL (4)
EEC	417	Teaching Reading to ESL Students (3)

### TEACHING ENGLISH AS A SECOND LANGUAGE MINOR

#### Required for Minor (24 credits):

ENG	381	Introduction to English Linguistics (4)
MODL	470	Theory and Methods of TESL I (4)
MODL	471	Theory and Methods of TESL II (4)
MODL	472	TESL Practicum (1)
ENG	482	English Phonetics and Grammar for TESL (4)
ENG	485	Language and Culture in TESL (4)
EEC	417	Teaching Reading to ESL Students (3)

#### Required for Minor (Professional Education K-12, minimum 30 credits):

See the SECONDARY AND K-12 PROFESSIONAL EDUCATION section for admission requirements to Professional Education and a list of required professional education courses. This 30 credit requirement includes 11 credits of student teaching as outlined below. Students must satisfactorily complete a student teaching component of full-day experiences for one academic semester, or its equivalent, including both elementary and secondary education levels with students of limited English proficiency.

### POLICIES/INFORMATION

**GPA Policy.** A grade of "C" or better must be earned for minor credit or for licensure.

**P/N Grading Policy.** Work done for the minor or for licensure must be done for a letter grade above the 200 level.

### COURSE DESCRIPTIONS

#### 470 (4) Theory and Methods of TESL I

Introduction to theories of second languages acquisition and description of program models for second languages literacy and academic success. Treats oral language development, literacy, content-based instruction, testing and placement of second language learners. F

#### 471 (4) Theory and Methods of TESL II

Teaching English as a second language: treats the skills of listening, speaking, reading, writing and vocabulary use. Consideration of individual and sociocultural factors in language learning.

Pre: MODL 470 S

#### 472 (1) Teaching English as a Second Language Practicum

A field experience including placement in the K-12 public school setting for students in the TESL licensure minor. Practicum students work with ESL students at the elementary and/or secondary level. Take concurrently with or following MODL 470 and MODL 471.

#### 475 (1-4) Topics in TESL

Topics in learning and teaching English as a Second/Foreign Language. May be repeated for credit. V

#### 499 (1-4) Individual Study

Special topics in language education. May be repeated for credit. F, S

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## Theatre and Dance

*College of Arts & Humanities*

*Department of Theatre and Dance*

201 Performing Arts Center • 507-389-2118

Web site: [www.MSUTheatre.com](http://www.MSUTheatre.com)

Fax: 507-389-2922

Chair: Paul J. Hustoles

Thomas Bliese, Jennifer Engler, Gary Erickson, Julie Kerr-Berry, David McCarl, Mike Lagerquist, Nina LeNoir, Steven Smith

The Department of Theatre and Dance is dedicated to two primary goals: to provide students with the highest caliber of training in theatre and dance that will allow them to create performances of any kind at any level, and to provide the southern Minnesota region with a multifaceted, high quality theatrical experience. These goals interweave to provide entertainment and education to those on both sides of the curtain.

**Admission to Major** is granted by the department. Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

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### THEATRE BA, BS

#### Required General Education for Major (3 credits):

THEA	100	Introduction to Theatre (3)
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#### Required for Major (Core, 19 credits):

THEA	110	Fundamentals of Acting (3) (THEA 101 (3) for Design/Technical Option)
THEA	235	Fundamentals of Directing (3)
THEA	252	Theatre Technology (3)
THEA	481	Theatre History I (3)
THEA	482	Theatre History II (3)

Choose a minimum of 4 credits from the following (3 areas must be represented):

THEA	102	Theatre Activity: Acting (1)
THEA	103	Theatre Activity: Management (1)
THEA	105	Theatre Activity: Stagecraft (1)
THEA	107	Theatre Activity: Costume (1)

## Theatre and Dance

THEA	108	Theatre Activity: Lighting (1)
THEA	109	Theatre Activity: Sound (1)

### Required for Major (Options, 29 credits):

Choose one of the following options.

#### PERFORMANCE (29 credits):

THEA	121	Movement for Theatre I (1)
THEA	122	Movement for Theatre II (1)
THEA	210	Intermediate Acting (3)
THEA	265	Stage Makeup (2)
THEA*	411	Music Theatre (3)
THEA	412	Theatre Speech I (1)
THEA	413	Theatre Speech II (1)
THEA	416	Acting Scene Studies (3)
THEA	417	Acting Techniques (3)
THEA	418	Acting Styles (3)
THEA*	419	Acting for Radio/TV (3)
THEA	xxx	Dance Electives (2)
THEA	xxx	Elective (3)
THEA	xxx	Elective (3)

\*Choose 1 of 2

#### PRODUCTION (29 credits):

THEA	255	Stagecraft (3)
THEA	260	Costume Construction (3)
THEA*	440	Scene Design I (3)
THEA	451	Drafting for the Theatre (3)
THEA*	460	Costume Design I (3)
THEA	464	Costume History (3)
THEA*	470	Lighting Design I (3)
THEA*	475	Sound Design (3)
THEA	xxx	Elective (3)
THEA	xxx	Elective (3)

\*Choose 3 of 4

Choose a minimum of 2 credits from the following:

THEA	303	Practicum: Theatre Management (1)
THEA	304	Practicum: Scene Design (1)
THEA	305	Practicum: Tech Theatre (1)
THEA	306	Practicum: Costume Design (1)
THEA	307	Practicum: Costume Construction (1)
THEA	308	Practicum: Light Design (1)
THEA	309	Practicum: Sound (1)

**Required for Bachelor of Arts (BA) degree ONLY:**  
Language (8)

**Required Minor: BA, Yes. BS, No.**

### DANCE and THEATRE ARTS BS TEACHING

#### Required General Education for Major (15 credits):

THEA	100	Introduction to Theatre (3)
THEA	123	Beginning Jazz Dance (1)
THEA	128	Beginning Modern Dance (1)
THEA	225	World Dance in Cultural Perspectives (3)
MUS	120	Introduction to Music (3)
HP	178	Social, Folk, & Square Dance Techniques (1)
HLTH	310	Drug Education (3)

#### Required for Major (Core, 38 credits):

THEA	110	Fundamentals of Acting (3)
THEA	200	Careers in Theatre (1)

THEA	223	Intermediate Jazz Dance (2)
THEA	235	Fundamentals of Directing (3)
THEA	252	Theatre Technology (3)
THEA	265	Stage Makeup (2)
THEA	324	Methods and Materials for Teaching Creative Dance & Dramatics (2)
THEA	411	Music Theatre (3)
THEA	424	Dance and Theatre Pedagogy (3)
THEA	430	Theatre Management (3)
THEA	475	Sound Design (3)
THEA	481	Theatre History I (3)
THEA	482	Theatre History II (3)

Choose one of the following:

THEA	440	Scene Design I (3) <b>or</b>
THEA	460	Costume Design (3) <b>or</b>
THEA	470	Lighting Design (3)

Choose a minimum of 4 credits from the following (3 areas must be represented):

THEA	102	Theatre Activity: Acting (1)
THEA	103	Theatre Activity: Management (1)
THEA	105	Theatre Activity: Stagecraft (1)
THEA	107	Theatre Activity: Costume (1)
THEA	108	Theatre Activity: Lighting (1)
THEA	109	Theatre Activity: Sound (1)
THEA	129	Dance Activity (1)

### Required for Major (Options, 16 credits):

Choose one of the following options.

#### DANCE (16 credits):

THEA	125	Afro-Caribbean Dance (1)
THEA	126	Beginning Ballet (1)
THEA	127	Beginning Tap Dance (1)
THEA	226	Intermediate Ballet (2)
THEA	227	Intermediate Tap Dance (2)
THEA	228	Intermediate Modern Dance (2)
THEA	321	Dance Composition & Improvisation (2)
THEA	328	Advanced Modern Dance (2)
THEA	429	Senior Dance Project (1)
THEA	xxx	Electives (2)

#### THEATRE (16 credits):

THEA	121	Movement for Theatre I (1)
THEA	122	Movement for Theatre II (1)
THEA	210	Intermediate Acting (3)
THEA	255	Stagecraft (3)
THEA	260	Costume Construction (3)
THEA	435	Advanced Directing Methods (3)
THEA	xxx	Electives (2)

### Required for Major (Professional Education, 30 credits):

See the Secondary 5-12 & K-12 Professional Education section for admission requirements to Professional Education and a list of required professional education courses.

**Required Minor: None.**

### THEATRE MINOR

#### Required General Education for Minor (3 credits):

THEA	100	Introduction to Theatre (3)
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#### Required for Minor (19 credits):

THEA	110	Fundamentals of Acting (3)
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## Theatre and Dance

THEA 235 Fundamentals of Directing (3)  
 THEA 252 Theatre Technology (3)  
 THEA 481 Theatre History I (3)  
 THEA 482 Theatre History II (3)

Choose a minimum of 4 credits from the following courses (3 areas must be represented):

THEA 102 Theatre Activity: Acting (1)  
 THEA 103 Theatre Activity: Management (1)  
 THEA 105 Theatre Activity: Stagecraft (1)  
 THEA 107 Theatre Activity: Costume (1)  
 THEA 108 Theatre Activity: Lighting (1)  
 THEA 109 Theatre Activity: Sound (1)

### DANCE MINOR

See the DANCE section for additional information

#### Required for Minor (15 credits):

THEA 123 Beginning Jazz Dance (1)  
 THEA 125 Afro-Caribbean Dance Forms (1)  
 THEA 126 Beginning Ballet (1)  
 THEA 127 Beginning Tap Dance (1)  
 THEA 128 Beginning Modern Dance (1)  
 THEA 223 Intermediate Jazz Dance (2)  
 THEA 226 Intermediate Ballet (2)  
 THEA 227 Intermediate Tap Dance (2)  
 THEA 228 Intermediate Modern Dance (2)  
 THEA 328 Advanced Modern Dance/Company Class (2)

#### Choose ONE of the following tracks:

##### Performance Studies (6 credits):

THEA 225 World Dance in Cultural Perspectives (3)  
 THEA 321 Dance Composition & Improvisation (2)  
 THEA 429 Senior Dance Project (1)

##### Teaching Track (6 credits):

THEA 424 Dance and Theatre Pedagogy (3)  
 THEA 324 Methods and Materials for Teaching Creative Dance and Dramatics (2)  
 THEA 329 Dance Practicum (1)

## POLICIES/INFORMATION

**GPA Policy.** A grade of C or better must be earned for major or minor credit.

**P/N Grading Policy.** Courses applied to a major or minor in the department may not be taken on a P/N basis, except by permission of the chair. Limit on number of activity credits. Students may take no more than 6 activity credits, and no more than 4 practicum credits.

## COURSE DESCRIPTIONS

### 100 (3) Introduction to Theatre

Survey of theatre arts; lectures, with lab experience available. F, S

### 101 (3) Acting for Everyone

Performance scenes and exercises for the beginner. F, S

### 102 (1-2) Theatre Activity: Acting

Acting in a mainstage or approved production. Pre: Consent F, S

### 103 (1-2) Theatre Activity: Management

Work on stage or house management, or public relations. Pre: Consent F, S

### 105 (1-2) Theatre Activity: Stagecraft

Work on stage crew in a mainstage production. Pre: Consent F, S

### 107 (1-2) Theatre Activity: Costume

Work on costume crew in a mainstage production. Pre: Consent F, S

### 108 (1-2) Theatre Activity: Lighting

Work on lighting crew in a mainstage production. Pre: Consent F, S

### 109 (1-2) Theatre Activity: Sound

Work on sound crew in a mainstage production. Pre: Consent F, S

### 110 (3) Fundamentals of Acting

Performance scenes and acting exercises for the beginning theatre major. Pre: Consent F

### 121 (1) Movement for Theatre I

Instructs the student through a series of movement exercises in body alignment, breathing, flexibility, strength and coordination. Pre: Consent F

### 122 (1) Movement for Theatre II

A continuation of Movement for Theatre I. Pre: THEA 121 S

### 123 (1) Beginning Jazz Dance

Fundamentals of beginning jazz dance technique. S

### 125 (1) Afro-Caribbean Dance

Fundamentals of African-based dance forms explored through West African and Caribbean roots. ALT-F

### 126 (1) Beginning Ballet

Fundamentals of beginning ballet technique. F

### 127 (1) Beginning Tap Dance

Fundamentals of tap dance technique utilized in musical theatre. S

### 128 (1) Beginning Modern Dance

Fundamentals of beginning modern dance technique and improvisation. F

### 129 (1) Dance Activity

Performing in a mainstage dance production. Pre: Consent F, S

### 200 (1) Careers in Theatre

Introduction to the various career opportunities directly in or appertaining to the theatrical arts. Pre: THEA 100 ALT-S

### 210 (3) Intermediate Acting

The process of character structuring through script analysis and scene work. Pre: THEA 110 or consent F

## Theatre and Dance

### 215 (2) Audition Methods

The development of a repertoire of audition pieces to increase the ability to perform with confidence on short notice.

Pre: THEA 110 or consent ALT-S

### 223 (2) Intermediate Jazz Dance

Expanding jazz dance technique moving into musical theatre dance combinations.

Pre: THEA 123 or consent F

### 225 (3) World Dance in Cultural Perspectives

Cross-cultural survey of dance with emphasis on historical, social and cultural dimensions.

Pre: THEA 125, 126 or 128 ALT-F

### 226 (2) Intermediate Ballet

Expanding ballet technique with emphasis on longer and more complex adagio, petite allegro, and grand allegro sections.

Pre: THEA 126 or consent S

### 227 (2) Intermediate Tap Dance

Expanding tap dance technique including advanced combinations utilized in musical theatre.

Pre: THEA 127 or consent F

### 228 (2) Intermediate Modern Dance

Expanding modern dance technique with emphasis on center floor combinations and longer, more complex traveling combinations.

Pre: THEA 128 or consent S

### 229 (1) Kinetic Learning in the Classroom

Acquiring a fundamental understanding of dance/movement elements and skills, and applying these concepts to the pre-school through elementary school curriculum.

Pre: Consent. F, S

### 235 (3) Fundamentals of Directing

Introduction to the theory and practice of directing for the theatre.

Pre: THEA 100 and 101 or 110 F

### 252 (3) Theatre Technology

Fundamental concepts of technical theatre; an overview of basic stagecraft, costuming, lighting, and sound in the contemporary theatre.

Pre: THEA 100 S

### 255 (3) Stagecraft

Introduction to theory and practice of construction techniques used in the theatre.

Pre: THEA 100 ALT-F

### 260 (3) Costume Construction

Theory and techniques in stage costume construction.

Pre: THEA 100 S

### 265 (2) Stage Makeup

Theory and practical laboratory work in stage makeup applications.

F

### 285 (3) Theatre of Diversity

A survey of literature, artists and performances with specific regard to the theatre of diversity including, but

not restricted to: Feminist Theatre, Gay and Lesbian Theatre, African-American Theatre, Asian American Theatre, Hispanic Theatre, etc.

ALT-S

### 291 (1-4) Individual Study

Pre: Consent F, S

### 295 (1-4) Touring Theatre

Work on the actual mounting and performance of a touring theatrical production.

Pre: Consent S

### 300 (1-4) Summer Stock

Technical work and/or acting in summer theatre productions.

Pre: Consent Sum

### 301 (1-2) Practicum: Directing

A considerable production responsibility which utilizes skills in script analysis, actor coaching, design coordination and general production management.

Pre: Consent F, S

### 302 (1-2) Practicum: Acting

A considerable production responsibility dealing with the preparation and performance of a major acting role.

Pre: Consent F, S

### 303 (1-2) Practicum: Theatre Management

Special assignments in stage management, house, and/or concessions management, public relations or related areas.

Pre: Consent F, S

### 304 (1-2) Practicum: Scene Design

Preparation and execution of a major scene design assignment. Requires a design and construction schedule, preliminary and final design concepts, and necessary drafting details.

Pre: Consent F, S

### 305 (1-2) Practicum: Tech Theatre

A considerable production responsibility dealing with some technical aspects including technical drawings, budget management, or construction techniques.

Pre: Consent F, S

### 306 (1-2) Practicum: Costume Design

Full and assistant costume design assignments for theatre productions.

Pre: Consent F, S

### 307 (1-2) Practicum: Costume Construction

The construction of costumes for theatre productions.

Pre: Consent F, S

### 308 (1-2) Practicum: Light Design

Preparation and execution of a major lighting design assignment. Requires a design with appropriate schedules, supervision of hanging, focusing and cues.

Pre: Consent F, S

### 309 (1-2) Practicum: Sound

Preparation and execution of a major sound design assignment including all sound effects, reinforcement and amplification.

Pre: Consent F, S

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## Theatre and Dance

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### **321 (2) Dance Composition and Improvisation**

The study of dance making, dance accompaniment, and dance criticism through the creation of dance works.  
Pre: THEA 125, 126, 228 ALT-S

### **324 (2) Methods and Materials for Teaching Creative Dance and Dramatics**

Exploration of teaching creative dance and dramatics in the K-12 setting.  
Pre: THEA 121, 122, 128 ALT-F

### **328 (2) Advanced Modern Dance/Company Class**

Advanced modern dance technique with emphasis on performance skills, elevation, and turns.  
Pre: THEA 228 or consent. F, S

### **329 (1) Dance Practicum**

Individualized teaching and/or choreographic experiences in the private or public sector.  
Pre: Consent. F, S

### **411 (3) Music Theatre**

Introductory survey of American Musical Theatre history and repertoire, as well as performance techniques for the singing actor.  
Pre: Consent ALT-F

### **412 (1) Theatre Speech I**

Study and exercises in vocal development emphasizing the demands of stage speech.  
Pre: THEA 210 or consent ALT-S

### **413 (1) Theatre Speech II**

Continuation of Theatre Speech I, including the study of the IPA.  
Pre: THEA 412 ALT-F

### **414 (1) Stage Dialects I**

A study and practice of vocal dialects most often used in performance.  
Pre: THEA 413 or consent. ALT-S

### **415 (1) Stage Dialects II**

A continuation of Stage Dialects I.  
Pre: THEA 413 or consent. ALT-F

### **416 (3) Acting Scene Studies**

Advanced scene studies with a focus on analysis and the varied approaches to developing motivations.  
Pre: THEA 210 ALT-S

### **417 (3) Acting Techniques**

The development of individual performance craft and advanced acting methodologies.  
Pre: THEA 210 ALT-F

### **418 (3) Acting Styles**

Advanced scene studies in classical and stylized dramatic literature.  
Pre: THEA 210 ALT-S

### **419 (3) Acting for Radio/TV**

Development of performance craft for the media.  
Pre: THEA 210 ALT-S

### **424 (3) Dance and Theatre Pedagogy**

Pedagogy of dance and theatre in the K-12 setting. Emphasis will include: national and state standards, assessment practices, lesson planning and curriculum

development. Taken in conjunction with KSP 420, this course will include pre-service teaching experience.  
Pre: THEA 324 ALT-S

### **425 (1) Styles of Motion**

Specialized training in a variety of physical techniques.  
Pre: Consent ALT-F, ALT-S

### **426 (1) Stage Combat**

An exploration of basic skills involved in unarmed combat and a variety of historical weapons systems with primary emphasis on theatricality and safety.  
Pre: Consent F

### **429 (1) Senior Dance Project**

This course represents a culminating experience for all dance minors. Individually paced and directed, this project can take either choreographic or written (academic) form. Periodic meetings will occur between student and instructor to assess progress.  
Pre: Completion of all dance minor requirements. F, S

### **430 (3) Theatre Management**

Exposes students to the functions of theatre managers through case studies, discussions, practical application and readings.  
Pre: THEA 235 ALT-S

### **435 (3) Advanced Directing Methods**

Advanced studies in script analysis, actor psychology and staging techniques culminating in performance projects with critical analysis.  
Pre: THEA 235 and consent. S

### **440 (3) Scene Design I**

Development of techniques and skills in the creation of scenery.  
Pre: THEA 252 or consent F

### **441 (3) Scene Design II**

Refinement of model building and drawing skills in theatrical design.  
Pre: THEA 440 S

### **445 (3) Scene Painting**

Provides information on materials and techniques of scenic painting with a large amount of lab time for experimentation with technique.  
Pre: THEA 252 or consent ALT-F

### **451 (3) Drafting for the Theatre**

Enhances the advanced theatre student's ability to show complex elements of a theatrical design in a clear manner using accepted theatrical drafting methods.  
Pre: THEA 255 or consent ALT-F

### **455 (3) Technical Direction**

Explores all facets of technical direction, construction techniques, and project management.  
Pre: THEA 252 and 255 ALT-F

### **460 (3) Costume Design I**

Theory and techniques in costume design and execution.  
Pre: THEA 252 or consent F

### **461 (3) Costume Design II**

Advanced costume design theory and techniques.  
Pre: THEA 460 ALT-S

## Urban & Regional Studies

### 464 (3) Costume History

Survey of costume history from ancient Egypt to 1900.  
Pre: Consent S

### 465 (3) Advanced Makeup

Practical application of advanced makeup techniques.  
Pre: THEA 265 ALT-S

### 470 (3) Lighting Design I

The study of lighting equipment, usage, techniques and stage lighting design.  
Pre: THEA 252 ALT-F, ALT-S

### 471 (3) Lighting Design II

Solving particular lighting design challenges.  
Pre: THEA 470 ALT-S

### 475 (3) Sound Design

Production and sound effects, electronic sound reinforcement of live performance, choice and operation of sound equipment, as well as basic music styles and terminology.  
Pre: THEA 252 S

### 481 (3) Theatre History I

Survey of theatrical history from its origins to 1700.  
Pre: THEA 100 ALT-S

### 482 (3) Theatre History II

Survey of theatrical history from 1700 to the present.  
Pre: THEA 100 ALT-S

### 492 (1-3) Theatre Field Studies

Pre: Consent

### 497 (1-8) Internship

Pre: Consent

### 499 (1-3) Individual Study

Pre: Consent

## Urban & Regional Studies

*College of Social & Behavioral Sciences*

*Urban & Regional Studies Institute*

106 Morris Hall • 507-389-1714

Web site: [www.mnsu.edu/dept/ursi](http://www.mnsu.edu/dept/ursi)

Institute Director: Anthony J. Filipovitch

William Bernhagen, Janet Cherrington-Cucore, David Laverny-Rafter, Miriam Porter, H. Roger Smith, Perry S. Wood,

The Urban and Regional Studies Institute is an interdisciplinary degree program oriented toward examining and understanding the broad range of problems and challenges associated with the nation's urban and regional areas. There are many career opportunities in community development, urban/regional planning, design, and management. Also, the major is excellent preparation for graduate work in the professional fields of planning, management, business, etc.

This national award-winning program includes classroom, research and field experience. In addition to formal course work, students are encouraged to undertake independent study, become involved in community service projects, participate in field studies, and accept internships in local agen-

cies. Students should contact the Urban and Regional Studies Institute for further information.

It is suggested that interested students include a second major in a related field. Students are encouraged to discuss their program with an advisor.

**Admission to Major** is granted by the department.

Minimum university admission requirements are:

- a minimum of 32 earned semester credit hours.

- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

### URBAN AND REGIONAL STUDIES BS

#### Required for Major (Core, 18 credits):

URBS 150	Sustainable Communities (3)
URBS 200	Urban Spaces People Places (3)
URBS 230	Community Leadership and Service Learning (3)
URBS 301	Urban Analysis I: Field (3)
URBS 302	Urban Analysis II: Research (3)
URBS 489	Capstone Seminar (3)

#### Required for Major (Electives, 15 credits):

Select 15 credits. See your advisor for an approved list of electives.

**Required Minor: Yes. Any.**

### URBAN AND REGIONAL STUDIES MINOR

#### Required for Minor (9 credits):

URBS 150	Sustainable Communities (3)
URBS 200	Urban Spaces People Places (3)
URBS 230	Community Leadership and Service Learning (3)

#### Required for Minor (Electives, 9 credits):

Select 9 credits. See your advisor for an approved list of electives.

### POLICIES/INFORMATION

**P/N Grading Policy.** The internship must be taken on a P/N basis. All other courses must be taken for grade.

### COURSE DESCRIPTIONS

#### 100 (3) Introduction to the City

A fresh look at the city, with emphasis on the reasons why cities have grown and how people can make cities livable. F, S

#### 110 (3) The City: Design and Architecture

Appreciation of the city as the highest cultural achievement in design and architecture. F, S

#### 150 (3) Sustainable Communities

This course will identify and analyze global social, economic, political and environmental problems impacting community viability and explore the full range of solutions to these problems. The course will view communities as complex, sustainable organisms and bring together the works of the great minds working on sustainability. F, S

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## Urban & Regional Studies

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### **200 (3) Urban Spaces People Places**

Sensitizes students to the elements of urban places which make cities great and memorable. F

### **230 (3) Community Leadership and Service Learning**

Introduction to community leadership—elected, professional, or voluntary—and the skills and values which support it. F, S

### **301 (3) Urban Analysis I: Field**

Introduces the basic techniques involved in urban research. F

### **302 (3) Urban Analysis II: Research**

Lecture and laboratory class designed to provide a basic understanding of formal research techniques used in urban studies. S

### **411 (3) Urban Policy Analysis**

Prepares students to analyze problems, identify alternative solutions and utilize techniques of analysis.

### **413 (3) Urban Program Evaluation**

Reviews processes and techniques related to evaluation of public programs.

### **415 (3) Urban Housing Policy**

Public policy and programs that address issues of housing supply, quality, costs, and neighborhood revitalization.

### **417 (3) Urban Law**

An overview of local government law and local governing powers. In addition, public issues in the legal context will be examined from a management and operational perspective.

### **431 (3) Urban Design Principles**

A basic working knowledge and vocabulary of urban design concepts and techniques in an applied problem-solving context.

### **433 (3) Urban Development**

Theory and applications of principles of landscape architecture or urban design.

### **435 (3) Downtown Revitalization**

Examines the problem of central business district deterioration and explores the changing patterns of economic and social mobility with primary focus upon the trends of downtown revitalization currently being employed by the public and private sectors. F

### **437 (3) Urban Heritage Preservation**

Preservation techniques, principles of structural evaluation, adaptive use potentials and options, economic consideration in preservation and the role of legislation. S

### **450 (3) The Urban Context**

Advanced course to explore the interactions of space and social institutions in an urban context.

### **451 (3) Nonprofit Sector**

Nature of the Third Sector, from a variety of perspectives, and implications for managing both internal and external relations of nonprofit organizations.

### **453 (3) Grants Administration**

Raising resources for public and nonprofit organizations—from needs assessment through obtaining funding to managing the grant after it is awarded.

### **455 (3) Regional & County Development**

Regional and county planning content and procedures, including basic research, land use planning, and implementation of regulations.

### **457 (3) Economic Development**

A survey course covering the concepts, processes, tools and strategies of economic development in local communities. Emphasis is on the “why” and “how” of economic development.

### **471 (3) Urban Transportation**

Examines transportation problems of, and solutions for large and medium sized cities. Special emphasis on reducing traffic congestion, improving management of transit systems, and linking transportation and land-use planning.

### **481 (1-3) Selected Topics**

Varying topics dealing with emerging trends and contemporary needs facing urban America.

### **483 (1-6) Workshop**

Varying topics using applied techniques to address community issues.

### **485 (1-6) Community-Based Problem Solving**

Problem solving in communities and direct involvement into specific areas of study of student interest.

Pre: Consent F, S

### **489 (3) Capstone Seminar**

Assemble and evaluate information and opinions into a coherent position on what makes cities work, and prepare for entry into professional world of work in cities. S

### **497 (1-12) Internship**

Scheduled work assignments, varying in length and content, under the supervision of selected professional sponsors.

Pre: Consent F, S

### **499 (1-4) Individual Study**

Independent study under supervision of an instructor with a research paper or report to be presented.

Pre: Consent F, S

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## Women's Studies

*College of Social & Behavioral Sciences*

*Department of Women's Studies*

109 Morris Hall • 507-389-2077

Web site: [www.mnsu.edu/dept/womenst/](http://www.mnsu.edu/dept/womenst/)

Chair: Carol O. Perkins

Maria Bevacqua

Courses in women's studies consider the roles and accomplishments of women in the past and the social, psychological, political, economic, and cultural forces



## Women's Studies

influencing their present and future condition. The women's studies curriculum addresses systems of oppression as they affect women: sexism, racism, classism, anti-Semitism and xenophobia, ageism, ableism, sizeism and heterosexism. The program shares the aim of extending human knowledge by examining traditional disciplines from a women's studies perspective and by pioneering research into new areas.

The department supports a variety of social and educational opportunities, including student organizations, forums, workshops, and research projects. Students are encouraged to take leadership roles in the development of special programs and to become actively involved with community women's organizations and with related campus groups.

**Admission to Major** is granted by the department. Admission requirements are:

- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.00 (C).

Contact the department for application procedures.

### WOMEN'S STUDIES BA (33 credits):

#### Required for Major (Core, 15 credits):

- WOST 110 Intro to Women's Studies (3)
- WOST 220 Perspectives on Women and Change (3)
- WOST 310 Perspectives on Feminist Thought (3)
- WOST 320 Undergraduate Seminar (3)
- WOST 430 Feminist Research and Scholarship (3)

#### Required for Major (Program Electives, 18 credits):

Choose 18 credits from the following and from Interdisciplinary Courses listed at the end of this section:

- WOST 120 Violence Prevention Education (3)
- WOST 230 Assertiveness and Self Esteem (2-3)
- WOST 240 Rural Studies (3)
- \*WOST251 Coming of Age: Gender & Culture (3)
- WOST 260 Selected Topics (1-4)
- WOST 277 Individual Study (1-6)
- WOST 290 Workshop (1-4)
- WOST 445 Women and Aging (3)
- WOST 455 Women, Sex & Identity (3)
- WOST 460 Selected Topics (1-4)
- WOST 477 Individual Study (1-6)
- WOST 490 Workshop (1-4)
- WOST 497 Internship (1-6)
- WOST 497 Internship: College Teaching (1-6)

**Required for Bachelor of Arts (BA) degree ONLY:** Language (8)

**Required Minor: Yes. Any.**

### WOMEN'S STUDIES BS (33 credits):

#### Required for Major (Core, 18 credits):

- WOST 110 Intro to Women's Studies (3)
- WOST 220 Perspectives on Women and Change (3)
- WOST 310 Perspectives on Feminist Thought (3)
- WOST 320 Undergraduate Seminar (3)
- WOST 430 Feminist Research and Scholarship (3)

Three credits of internship required.

- WOST 498 Internship (1-6) **or**
- WOST 497 Internship: College Teaching (1-6)

#### Required for Major (Program Electives, 15 credits):

Choose 15 credits from the following and from Interdisciplinary courses listed at the end of this section:

- WOST 120 Violence Prevention Education (3)
- WOST 230 Assertiveness and Self Esteem (2-3)
- WOST 240 Rural Studies (3)
- WOST 251 Coming of Age: Gender and Culture (3)
- WOST 260 Selected Topics (1-4)
- WOST 277 Individual Study (1-6)
- WOST 290 Workshop (1-4)
- WOST 445 Women and Aging (3)
- WOST 455 Women, Sex & Identity (3)
- WOST 460 Selected Topics (1-4)
- WOST 477 Individual Study (1-6)
- WOST 490 Workshop (1-4)

**Required Minor: Yes. Any.**

### WOMEN'S STUDIES MINOR (21 credits):

#### Required for Minor (12 credits):

- WOST 110 Intro to Women's Studies (3) **or**
- WOST 220 Perspectives on Women and Change (3) **and**
- WOST 310 Perspectives on Feminist Thought (3)
- WOST 320 Undergraduate Seminar (3)
- WOST 430 Feminist Research and Scholarship (3)

#### Required for Minor (Electives, 9 credits):

- WOST 120 WOST 230 WOST 240
- WOST 251 WOST 260 WOST 290
- WOST 445 WOST 455 WOST 460
- WOST 490

#### Women's Studies Program Interdisciplinary Courses

- ANTH 431 Applied Cultural Research (3)
- ANTH 433 Anthropology of Gender (3)
- ANTH 485 Selected Topics (1-3)
- ART 419 Gender in Art (3)
- BIOL 101 Biological Perspectives: Biology of Women (3)
- CORR 485 Topics: Women, Crime & Justice (2-6)
- KSP 423 Sexist Influences in Human Development (3)
- ENG 215 Topics (1-3)
- ENG 495 Special Study: Sex and Language (3)
- ETHN 401 Applied Cultural Research (3)
- ETHN 470 Women of Color (3)
- ETHN 480 Social Justice in Ethnicity & Gender (3)
- HIST 155 History of the Family in America (3)
- HIST 487 United States Women's History (4)
- HLTH 400 Women's Health (3)
- \*HUM 251 Coming of Age Gender Culture (3)
- LAW 235 Women in Law Enforcement (3)
- PHIL 450 Special Topics (3)
- POL 484 Women and Politics (3)
- PSYC 460 Psychology of Women (3)
- SOWK 420 Women's Issues in Social Work (3)
- SOC 307 Sex and Gender in Contemporary Society (3)

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## Urban & Regional Studies

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SOC 409 Family Violence (3)  
 SOC 485 Topic: Violence Against Women (2-6)  
 \* WOST 251 and HUM 251 is cross-listed

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### POLICIES/INFORMATION

**GPA Policy.** A GPA of 2.0 is required, and a grade of "C" or better must be earned in all Women's Studies courses.

**P/N Grading Policy.** With the exception of workshops and internships, only two classes may be taken on a P/N basis.

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### COURSE DESCRIPTIONS

#### 110 (3) Intro to Women's Studies

Focus is on the social construction of gender, race, class, and sexual identity. Gaps between reality and stereotypes are examined. The goal of this course is to familiarize students with Women's Studies scholarship and provide the tools to connect what one learns to one's life and to further academic study. F, S

#### 120 (3) Violence Prevention Education

Students will examine the gendered and systematic nature of violence. Special attention will be given to the ways in which violence against women is perpetuated through interpersonal relationships and through institutions such as schools, the judicial system, welfare policies. The effects of internalized oppressions, such as internalized sexism, racism, and homophobia will be discussed. Emphasis on feminist analysis and building skills for educating ourselves and others about constructing non-violent cultures. S

#### 220 (3) Perspectives on Women & Change

Focus is on women activists in past and current social change movements in the U.S. and world; strategies and tactics which have been used to create social, political and economic change; the self as an agent of change in terms of personal empowerment and group activism; all in the context of interlocking systems of oppression. F, S

#### 230 (2-3) Assertiveness & Self Esteem

Increase awareness of human rights, including contemporary arguments about women's and children's rights; sharpen interpersonal and public communication skills as tools for building self-esteem; heighten self-confidence; develop/enhance group communication/activism skills. S

#### 240 (3) Rural Studies

Students will explore some of the major variables that impact the lives of rural populations. Emphasis will be placed on understanding the diversity in experiences and history in both national and international rural communities, as well as on understanding which public policies can maximize the success of rural environments. V

#### 251 (3) Coming of Age: Gender and Culture

Students will become aware of diverse experiences of coming of age and will reflect on their own experiences. Diversity of experiences presented will include: race/ethnicity, gender, sexual orientation, religion, socio-economic class, ability/disability and nationality. S

#### 260 (1-4) Selected Topics

Offered according to student demand and instructor availability/expertise, topics courses provide curriculum enrichment on an ongoing basis. V

#### 277 (1-6) Individual Study

Concentrated study and research in areas of student's special interests/expertise under supervision of a faculty member.

Pre: Women's Studies major/minor F, S

#### 290 (1-4) Workshop

Topics to be announced. May be retaken for credit. V

#### 310 (3) Perspectives on Feminist Thought

Examine major theories of feminism and salient issues in women's movements of the nineteenth, twentieth and twenty-first centuries. F

#### 320 (3) Undergraduate Seminar

Advanced topics in feminist theory and activism.  
 Pre: WOST 110 or 220 or consent S

#### 430 (3) Feminist Research and Scholarship

This course explores fields of feminist research and scholarship that emerged in the 20th century with emphasis on contemporary debates about feminist methodologies. Focus will be on the relation between feminist critiques and research being done by feminist scholars in the social sciences and humanities. Students conduct original research.

Pre: WOST 110 or 220, or consent S

#### 445 (3) Women and Aging

Exploration of the forces of ageism in women's lives with goal of naming and deconstructing interacting systems of oppression. Focus on work, health, sexuality, relationships and on policy issues affecting women across the life cycle. Cross cultural emphasis. ALT

#### 455 (3) Women, Sex & Identity

An exploration and overview of lesbian/bisexual/transgender identities. Possible topics include historical and cross-cultural perspectives; lesbian/bisexual/transgender identities in relation to class, race, age, ethnicity, and disability; lesbian feminism, images and stereotypes; legal status, and lesbian/bisexual/transgender cultures. ALT

#### 460 (1-4) Selected Topics

Offered according to student demand and instructor availability/expertise, topics courses provide curriculum enrichment on an ongoing basis. V

#### 477 (1-6) Individual Study

Concentrated study and research in areas of student's special interests/expertise under supervision of a faculty member.

Pre: Must be department major/minor F, S

#### 490 (1-4) Workshop

Topics to be announced. May be retaken for credit. V

## Miscellaneous Course Descriptions

### 497-00 (1-6) Internship: College Teaching

Students assist a faculty member in teaching Women's Studies 110 or 220.

Pre: WOST 110 or 220 and consent F, S

### 498-49 (1-6) Internship

Placement in a community or university-based internship provides the student with experience and practical skills in a particular field of work or service and/or provides an opportunity to pursue a specific research interest. F, S

## Miscellaneous Course Descriptions

### Counseling & Student Personnel

#### 110 (3) Decision Making for Career and Life

The purpose of this course is to help students develop critical thinking, problem solving and decision making skills necessary to manage the challenges they face now (choice of major) and in the future (career choice and balancing work and life roles). Meets General Education requirements for critical thinking. F, S

#### 470 (3) Group Procedures

Strategies for establishing a group. A review of concepts related to group membership, group member roles and group techniques, therapeutic factors and leadership roles. An experiential component is included in this course. Pre: CSP 471 SS

#### 471 (3) Interpersonal Helping Skills

Provides the developing helping professional with an introduction to basic helping skills: attending, listening, responding to content and affect, probing, and providing feedback. The course is experiential in nature and includes small group interaction, videotaping, and role playing simulations. S, SS

#### 473 (3) Counseling the Chemically Dependent Family

Understanding the impact of chemical dependency on the family. Family counseling skills and relapse prevention strategies will also be included. Pre: CSP 471 S

### Modern Language

#### 460 (3) Methods of Teaching Modern Languages

Introduction to theory and practice of modern language teaching, including lessons in listening, speaking, reading, writing, vocabulary, and culture. Includes testing, program design, lesson planning, and use of technology. F

#### 461 (1) Applied Modern Language Teaching Methods

A field experience including placement in the secondary level school setting for students earning licensure in modern language teaching. Practicum students work with middle or high school students of French, German, or Spanish. Take concurrently with or following MODL 460.

#### 462 (3) Foreign Languages in the Elementary School Methods

Introduction to theory and practice of modern language

teaching for children grades K-6, including oral language development, second language literacy development, content-based language instruction, and techniques for language immersion programs.

Pre: Student must demonstrate oral proficiency level of Intermediate-Mid on ACTFL scale in target language before enrolling.

#### 463 (1) Applied Foreign Languages in the Elementary School Methods

A field experience including placement in the elementary level school setting for students earning licensure in modern language teaching. Practicum students work with elementary school students in French, German, or Spanish. Take concurrently with or following MODL 462.

#### 465 (1-3) Workshop in Modern Language Education

Topics in modern language education. May be repeated for credit. V

#### 470 (4) Theory and Methods of TESL I

Introduction to theories of second language acquisition and description of program models for second language literacy and academic success. Treats oral language development, literacy, content-based instruction, testing and placement of second language learners. F

#### 471 (4) Theory and Methods of TESL II

Teaching English as a second language: treats the skills of listening, speaking, reading, writing and vocabulary use. Consideration of individual and sociocultural factors in language learning. Pre: MODL 470 S

#### 472 (1) Teaching English as a Second Language Practicum

A field experience including placement in the K-12 public school setting for student in the TESL licensure minor. Practicum students work with ESL students at the elementary and/or secondary level. Take concurrently with or following MODL 470 and MODL 471.

#### 475 (1-4) Topics in TESL

Topics in learning and teaching English as a Second/Foreign Language. May be repeated for credit. V

#### 499 (1-4) Individual Study

Special topics in language education. May be repeated for credit. F, S

### Rehabilitation Counseling

#### 110 (3) Sensitivity to Disability

Promotes an understanding of the impact of physical and mental disabilities on people in their daily lives through in-class contacts and exercises with and about persons with disabilities. F, S

#### 410 (3) Introduction to Independent Living

Introduction to independent living services and philosophy is presented. Students will attend labs at selected sites. V

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## Miscellaneous Course Descriptions

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### **424 (3) Rehabilitation of the Chemically Dependent**

Exploration and development of research and entry-level skills in diagnosis, treatment planning, service provision, and after-care with chemically dependent persons, particularly those with co-existing physical and mental conditions. F

### **435 (3) Disability Legislation/Advocacy and Independent Living**

Disability legislation and the implications for the practice of independent living and empowerment of persons with disabilities will be presented from a self and systems advocacy perspective. V

### **440 (3) Case Management in Independent Living**

Training in the rationale, techniques and processes of case management used in independent living practice across various settings. V

### **490 (1-2) Workshop**

Special training/education offered by a faculty member in an area of expertise. V

### **497 (1-6) Internship**

A part-time placement in a community independent living facility or organization under the sponsorship of an agency mentor and faculty supervisor.

Pre: Consent

V

### **499 (1-4) Individual Study**

A project performed under the prior approval and close supervision of a faculty member to enhance the student's education.

Pre: Consent

V

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## **Russian**

### **101 (4) Elementary Russian I**

First semester Russian. Course offered at Gustavus Adolphus College.

### **102 (4) Elementary Russian II**

Second semester Russian. Course offered at Gustavus Adolphus College.

Pre: RUSS 101 or equivalent

### **201 (4) Intermediate Russian I**

Third semester Russian. Course offered at Gustavus Adolphus College.

Pre: RUSS 102 or equivalent

### **202 (4) Intermediate Russian II**

Fourth semester Russian. Course offered at Gustavus Adolphus College.

Pre: RUSS 201 or Equivalent

### **301 (4) Advanced Composition and Conversation I**

Course offered at Gustavus Adolphus College.

### **302 (4) Advanced Composition and Conversation II**

Course offered at Gustavus Adolphus College.

### **304 (1-4) Conversation and Phonetics**

Course offered at Gustavus Adolphus College.

### **401 (4) Russian Literature I**

Course offered at Gustavus Adolphus College.

### **402 (4) Russian Literature II**

Course offered at Gustavus Adolphus College.

### **492 (2-6) Independent Study**

Course offered at Gustavus Adolphus College.

### **499 (1-4) Individual Study**

Course offered at Gustavus Adolphus College.

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## **Special Populations**

*College of Education*

*Department of Educational Studies: Special Populations*

313 Armstrong Hall • 507-389-1122

Chair: Andrew P. Johnson

The Department of Educational Studies: Special Populations offers graduate programs at Minnesota State University designed to prepare professionals to work in a variety of organizational settings and positions serving individuals with special needs. Students can choose from 7 graduate programs:

- Specialist Degree in Talent Development and Gifted Education
- Masters of Science in Talent Development and Gifted Education
- Masters of Science in Emotional/Behavioral Disorders
- Masters of Science in Learning Disabilities
- Certificate in Talent Development and Gifted Education
- Certificate in Emotional/Behavioral Disorders
- Certificate in Learning Disabilities

Undergraduate course offerings are supportive of general education curriculum. Two courses, ESSP 405 and ESSP 448, are prerequisites for graduate programs in Emotional/Behavioral Disorders and Learning Disabilities.

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## **EDUCATIONAL STUDIES: SPECIAL POPULATIONS**

### *Undergraduate Coursework*

ESSP	304	Young Children with Individual Needs
ESSP	*405	Individuals with Exceptional Needs
ESSP	415	Introduction to Talent Development
ESSP	418	Education of Students with Learning Disabilities
ESSP	419	Education of Students with Mild Disabilities
ESSP	420	Education of Young Children with Exceptional Needs
ESSP	421	Assessment of Young Children with Special Needs
ESSP	440	Teaming with Parents and Other Professionals
ESSP	*448	Behavior Management
* prerequisite for admission to graduate program		

## Miscellaneous Course Descriptions

ESSP	490	Workshop
ESSP	491	In-Service: Special Education
ESSP	499	Individual Study

### COURSE DESCRIPTIONS

#### **304 (3) Young Children with Individual Needs**

Students will demonstrate understanding of young children with atypical development, their special educational needs, and documentation of their development. Also included are skills for accurate observation of typical and atypical development including skills for writing appropriate goals for young children in a variety of environments.

#### **\*405 (3) Individuals with Exceptional Needs**

This course provides a rigorous overview to the education of children and youth who differ greatly from the average in physical, cognitive, emotional or social characteristics. It introduces the student to Minnesota's Graduation Standards Rule in relation to the needs of children and youth who receive special education services.

#### **415 (3) Introduction to Talent Development**

Students will explore the history, definitions, practices, characteristics, needs, special populations, and models within the field of talent development and gifted education.

#### **418 (2) Education of Students with Learning Disabilities**

This course provides an understanding of the history, identification, assessment, programming, and services needed for students with learning disabilities.

#### **419 (4) Education of Students with Mild Disabilities**

This course is designed to provide students with information on the history, characteristics and definitions of students with mild disabilities (high incidence special education populations) as well as to explore the interventions of teaching students with mild disabilities.

Pre: ESSP 405 or EEC 407

#### **420 (3) Education of Young Children with Exceptional Needs**

Legal, historical, and foundational issues in the education of young children with disabilities as well as characteristics, service needs, and models of service for young children with disabilities with emphasis on young children with moderate/severe disabilities.

#### **421 (3) Assessment of Young Children with Special Needs**

Screening and assessment for placement and programming for infants and young children with disabilities. Includes evaluation and administration of instruments application, assessment information, child progress evaluation, and evaluation of functioning in an environment.

#### **440 (3) Teaming with Parents and Other Professionals**

This course provides a theoretical and practical base for conferencing and collaboration with parents of chil-

dren and youth with exceptional needs and other professionals in a team construct. Its content includes practical and theoretical understanding of the history and purpose of teaming and application of the Minnesota Graduation Standards Rule.

#### **\* 448 (3) Behavior Management**

Applied practical approaches to improve academic and personal-social behavior of individuals who have mild or moderate disabilities in general education and special education programs. Principles of applied behavior analysis including reduction and enhancement procedures will be explored.

#### **490 (1-3) Workshop in Special Education**

Authentic applications of special education knowledge.

#### **491 (1-2) In-Service: Special Education**

Teaching students with disabilities.

#### **499 (1-3) Individual Study**

Advanced independent study in a specified area.