

## Aviation

College of Education

Department of Aviation and Business Education

107 Armstrong Hall • 507-389-6116

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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 117 Armstrong Hall. MSU coursework must be submitted (unofficial transcript.) Transfer students must also 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).

### 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	440	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 Accreditation (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 with 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 cumulative GPA.

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

## COURSE DESCRIPTIONS

### AVIA 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  
CD-Related

### AVIA 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

### AVIA 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

### AVIA 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

### AVIA 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

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

Pre: AVIA 150, or equivalent F, S

### AVIA 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

### AVIA 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

### AVIA 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

### AVIA 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

### AVIA 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

### AVIA 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

### AVIA 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

### AVIA 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

### AVIA 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

### AVIA 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

### AVIA 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

### AVIA 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

### AVIA 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.

### AVIA 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

### AVIA 438 (3) Flight Engineer

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

F

### AVIA 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

### AVIA 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

**AVIA 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

**AVIA 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

**AVIA 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

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

Prepares students who desire careers as professional pilots. Emphasizes complete ground tutoring and flight instruction relating to instrument maneuvers, regulation interpretation, pilot discipline and professional procedures.

F, S

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

Variable

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

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

F, S

**AVIA 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