

Students may choose program emphases (or a combination of them) in such areas as flight, maintenance, business, avionics, and engineering technology.

Programs

If any of the degree programs do not meet the needs of the student, an individualized major is available as described on the

MAINTENANCE AREA COURSES

FAA Maintenance Certificates. Students may earn the following FAA-approved certificates from the department's Aviation Maintenance Technician School:

- Aircraft Airframe
- Aircraft Powerplant

Maintenance students must obtain either the FAA Airframe or Powerplant license for any degree or certificate.

Required Courses—52

AVMT 108, 114, 116, 120, 204, 206, 210, 220, 226, 237, 304, 306, 308, 310, 314, and 316.

Courses

(Credits)

See inside front cover for symbol code.

AVIATION FLIGHT

AFLT104 (1-4)

Introduction to Aviation

Acquaints students with opportunities in aviation, such as mission flying, flight instruction, aircraft maintenance, avionics, sales, safety, and aerodynamics of flight. Non-majors receive one free hour dual instruction per credit hour enrolled. *Fall, Spring*

AFLT111 (4)

Private Pilot Ground School

Ground training to prepare students for the FAA private pilot airplane knowledge test. Topics include aerodynamics, weight and balance, Federal Aviation Regulations, navigation, meteorology, aircraft systems and performance. *Fall, Spring, Summer*

AFLT112 (1-4)

Private Pilot Flight Training

Flight and ground training to prepare students for the FAA private-pilot airplane practical test. Repeatable to 8 credits. *Fall, Spring, Summer*

AFLT202 (2)

Commercial Pilot Ground School

Ground training to prepare the student for the FAA commercial-pilot airplane knowledge test. Topics include advanced navigation, FAR Parts 61, 91, and 135 for air taxi, complex aircraft systems, weight and balance, and performance charts. *Fall, Spring, Summer*

AFLT203 (2)

Commercial Pilot Flight Training

Flight training and solo-flight practice to prepare the student for the FAA commercial-pilot airplane practical test. Repeatable to 4 credits. *Fall, Spring, Summer*

AFLT301 (3)

Instrument Pilot Ground School

Ground training to prepare the student for the FAA instrument-rating airplane knowledge test. Topics include Federal Aviation Regulations, meteorology, instrument flight charts, flight planning, instrument approaches, use of navigation equipment, and FAA publications relating to instrument flight. *Fall, Spring, Summer*

AFLT302 (3)

Instrument Pilot Flight Training

Instrument flight training to prepare the student for the FAA instrument-rating airplane practical test. Repeatable to 6 credits. *Fall, Spring, Summer*

AFLT307 (2)

Multi-Engine Flight Training

Flight and ground training to prepare the student for the multi-engine airplane practical test. *Fall, Spring, Summer*

AFLT315 (3)

Aircraft Systems for Pilots

The study of aircraft engines, propellers, and governors; the fuel, electrical, hydraulic, pneumatic, and de-icing systems, flight controls, weight and balance, and aircraft-instrument systems. *Fall*

AFLT330 (1-3)

Crew Resource Management

Study of the effective use of resources available to the crew to achieve safe and efficient flight operations. Areas include human factors, communication, conflict resolution, leadership, teamwork, and situational awareness as applied to flight operations.

knowledge test. Topics include the techniques of teaching advanced weather theory, weather reports and forecasts, instrument procedures and regulations, approaches, and enroute operations. *Fall, Spring, Summer*

AFLT474 (3)
Techniques of Mission Flying

Develops special piloting skills required in remote undeveloped bush operations. Topics include pilotage, dead reckoning, GPS navigation, low-level operations, terrain flying, mountain passes and canyons, cargo drops, short fields, uphill and downhill operations on primitive airstrips, maximum performance techniques, and precision airplane control. *Arranged*

AFLT485 (3)
Airline Transport Pilot Ground School

Prepares the student for the FAA airline transport pilot knowledge test. Topics include air-carrier or air-taxi regulations, high altitude weather, advanced weight and balance, and the performance and special problems in large airplane operations. *Fall, Spring, Summer*

AFLT486 (3)
Airline Transport Pilot Flight Training

Flight and ground training to prepare the student for the FAA airline transport pilot airplane practical test. Topics include instrument procedures, in-flight maneuvers, take-offs, landings, advanced airplane systems, and emergency procedures. *Fall, Spring, Summer*

AERONAUTICAL TECHNOLOGY

AVIA275/476 (1-2)
Topics in _____
Repeatable with different topics in aviation. *Arranged*

AVIA295 (1-3)
Cooperative Work Experience
Work experience with an aviation organization or airline. A minimum of 120 hours of work required per credit. Graded S/U. Prerequisite: Permission of department. *Arranged*

AVIA296/495 (1-2)
Independent Study
Enables students to pursue topics in aviation not offered in other scheduled courses. Prerequisite: Permission of the department. Repeatable to 4 credits. *Arranged*

AVIA395 (1-2)
Practicum
Lab or on-the-job experience to build skills in a specific area of aviation technology. Prerequisite: Permission of department. Repeatable to 4 credits. *Arranged*

AVIATION MAINTENANCE

AVMT108 (4)
Applied Science for Aerospace Technicians
Applies the sciences of mathematics and physics to the aerodynamics of flight, maintenance, weight and balance and various maintenance problems that the aircraft-maintenance technician could encounter. Includes the study and use of drawings and basic ground operations. *Fall*

AVMT114 (2)
Aircraft Basic Electricity
A study of the fundamental basics of electricity and electronics; including electrical diagrams, calculations, sources of electrical power, direct and alternating current, aircraft storage batteries, capacitance and inductance, binary code and the basics of solid state logic. *Fall*

AVMT116 (2)
Federal Regulation, Publications, Forms and Records
Study of the federal regulations and manufacturer publication as they apply to aircraft design, maintenance, inspections, forms and records, and the certification and privileges/limitations of the aviation maintenance technicians. *Fall*

AVMT120 (4)
Materials and Processes for Aircraft Structures
Includes hand-and-power tool usage, aircraft hardware and materials, precision measurements, corrosion control, non-destructive testing, and fluid lines and fittings. *Fall*

AVMT204 Alt (2)
Aircraft Electrical Systems
Practical study of aircraft electrical systems, including installation practices, repair, trouble shooting, service, inspections, and navigation and communication systems. *Spring*

AVMT206 Alt (4)
Powerplant Electrical Systems
A study of engine ignition and engine electrical systems (starter, generators, alternators, auxiliary electrical power units and their control circuits, engine instruments, and engine fire protection-suppression systems). *Spring*

AVMT210 Alt (4)
Aircraft Systems
A study into the inspection, repair, checking, servicing and trouble-shooting of the following aircraft systems; ice-and-rain detection, cabin atmosphere (pressurization, heating, cooling, and oxygen), position warning systems, fire detection and protection, and aircraft instruments and their use in troubleshooting of aircraft systems. *Spring*

AVMT220 Alt (2)
Aircraft Fuels and Fuel Systems
A study of the various types and handling of fuels used in aircraft. Includes a study of aircraft fuel systems, fuel-metering methods and the inspection, checking, servicing, troubleshooting, repair, and overhaul of fuel systems and their components. *Spring*

AVMT226 Alt (2)
Engine Fuel Metering Systems
A study of the engine side of the fuel systems (firewall forward). Includes a study of fuel-metering devices used on aircraft engines (carburetors, pressure carburetors, direct and continuous fuel-injection systems). Service, maintenance, repair and troubleshooting of each different system type is covered in detail. *Spring*

AVMT228 (1-3)
Maintenance: General, Airframe, or Powerplant Review
A review of all subjects from a selected curriculum. A minimum of five examinations per curriculum area is required. Prerequisites: All applicable curriculum subjects 44 Omum

AVMT237 **Alt (4)**
Aircraft Hydraulic, Pneumatic, and Landing Gear Systems
 Operation and maintenance of aircraft hydraulic systems, pneumatic systems, landing-gear systems, and the inspection, checking, servicing, trouble-shooting, and repair of these systems and system components. *Spring*

AVMT304 **Alt (4)**
Aircraft Metal Structures
 A study and application of the processes used in the fabrication and repair of aircraft metal structures. Welding theory and practice with emphasis on weld-quality identification. Riveted, aircraft, aluminum, sheet-metal structures including the fabrication and repair of such structures. *Fall*

AVMT306 **Alt (2)**
Aircraft Non-metal Structures
 A study of wood and fabric as used in the construction of aircraft and a study of the methods, tooling, inspection, processes, and repair of composite aircraft structures. Includes the application, identification, and functions of aircraft protective finishes. *Spring*

AVMT308 **Alt (2)**
Aircraft Assembly, Rigging and Inspections
 Study of the nomenclature and design features of both fixed-wing and rotor-wing aircraft and the assembly, alignment of aircraft structures, and rigging and balancing of control system. A detailed inspection of the entire aircraft or rotorcraft is covered as it applies to the airframe 100-hour and other required inspection. *Spring*

AVMT310 **Alt (4)**
Gas Turbine Engines
 Principles and theory of jet-engine propulsion, design, types of, and associated systems. Maintenance, overhaul, installation-removal, repair, trimming, and troubleshooting of turbine engines. *Fall*

AVMT314 **Alt (3)**
Aircraft Propellers and Engine Inspections
 Theory and limited work on propellers, both wood and metal. Encompasses fixed, adjustable, controllable, feathering, reversible, and the control of the latter by mechanical, hydromatic, or electrical control systems. Including the concept of the unducted fan, and the inspection practice of performing the 100-hour inspection on aircraft engines and propellers. *Spring*

AVMT316 **Alt (7)**
Reciprocating Engine Systems and Overhaul
 A study of reciprocating engine theory, overhaul methods, and practices and the installation of reciprocating engines. Also includes a study of the following engine systems: exhaust, cooling, induction, and lubrication. *Spring*

AGRICULTURE

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Faculty

Thomas N. Chittick, *Chair*
 Stanley Beikmann
 Katherine Koudele-Joslin
 Ralph C. Wood

Academic Programs	Credits
BS: Agriculture	40
BS: Animal Science	40
Pre-Veterinary Medicine Management	
BS: Horticulture	40
Landscape Design	
Landscape/Turf Management	
BT: Agriculture	60
BT: Horticulture	60
Landscape Design	
Landscape/Turf Management	
AT: Agriculture	36
Crop Production	
Dairy Herd Management	
Veterinary Assistant	
AT: Horticulture	35
Landscape Design	
Landscape/Turf Management	
Minors in Agriculture, Animal Science or Horticulture	20
Pre-Professional Program in Veterinary Medicine	

Programs

Bachelor of Science. The BS degree prepares individuals to pursue advanced degrees for careers in teaching or research. Students may major in agriculture, animal science or horticulture with a minor to complement their intended purpose.

Bachelor of Technology. The BT degree is a career specialist's degree. Graduates are prepared for supervisory and management positions in production agriculture, horticulture, or the ornamental horticulture industry.

Associate of Technology. The two-year AT degree programs provide students with adequate skills and working knowledge to apply for entry-level positions in their area of specialization.

BS: Agriculture

Major requirements—40

AGRI100, 118, 206, 300, 304, 308, 405; ANSI114; HORT105, plus 13 major elective credits chosen in consultation with advisor.

Cognate requirements—18

BIOL165,166; CHEM131, 132