

COLLEGE OF TECHNOLOGY

M. Wesley Shultz, *Dean*
 Gerald W. Coy, *Associate Dean*

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 FAX: (616) 471-6292
 cot-info@andrews.edu
 http://www.andrews.edu/COT/

BACCALAUREATE DEGREE CORE REQUIREMENTS

The BSET and BT core requirements are as follows:

BSET—24

ENGR120, ELCT141, 142, MECT121, MECT235, INDT450, ENGT310, or ENGT396 or GTEC395 or INDT315

BT—8

ENGR370, INDT310, AGRI395 or GTEC395 or INDT315

General Courses

(Credits)

See inside front cover for symbol code.

GTEC110

(2)

Freshman Seminar

College success and life enrichment skills. Included are an introduction to the resources of the university, principles of critical thinking, and Christian values clarification.

GTEC115

(2)

College Seminar

See description under GTEC110. Repeatable.

GTEC298

(1-32)

Prior Learning Assessment

Prior Learning Assessment (PLA) is a process which validates learning experiences occurring outside traditional college/university academic programs. A portfolio of evidence for demonstrating experience and competency justifies and determines the amount of credit granted. Repeatable with different topics.

GTEC395

(1-6)

Cooperative Work Experience

Supervised (by the dean or his appointee) on-the-job work experience with a cooperating industry. A minimum of 120 hours of work is required per credit. The student must submit a report of the cooperative work experience as specified by the instructor. Repeatable to 6 credits. Graded S/U. Prerequisites: an associate degree in technology or equivalent and permission of the dean. Students must apply and be accepted one semester in advance of their planned Cooperative Education experiences.

GTEC498

(1-32)

Prior Learning Assessment

See description under GTEC298. Total Prior Learning Assessment credits (GTEC298 and 498) may not exceed 32 credits.

INDIVIDUALIZED PROGRAMS OF STUDY

For students who have career goals or special interests in areas other than those provided in one of the established majors or minors, a special individualized program is available in the following degrees: Bachelor of Science, Bachelor of Science in Engineering Technology, Bachelor of Technology, and Associate of Technology. An individualized concentration may be planned to meet the career goals of a student. Before the beginning of the junior year for baccalaureate-degree students or the beginning of the sophomore year for associate-degree students, the student, with the assistance of his or her advisor, prepares a proposed program of study. The program must be approved by a department faculty and the College of Technology Academic Policies and Curricula Committee.

AERONAUTICAL TECHNOLOGY

Seamount Building (Airpark)

(616) 471-3548

FAX: (616) 471-6004

airinfo@andrews.edu

http://www.andrews.edu/academic/cot/aerotech

Faculty

Gary A. Marsh, *Acting Chair*

Richard L. Kaping

Ruth Ann Plue

Daniel Thompson

Academic Programs	Credits
BSET: Aircraft Engineering Technology	155
BT: Aviation Technology	124-128
Avionics and Maintenance	
Flight	
Flight and Business	
Flight and Maintenance	
Maintenance	
Maintenance and Business	
AT: Aviation Technology	62-74
Flight	
Maintenance (52)	
Minor in Aviation Technology	21
Flight	
Maintenance (32)	
FAA-approved Part 141—Flight Training	
Commercial Pilot	
Flight Instructor	
Instrument Rating	
Multi-Engine Rating	
Private Pilot	
FAA-approved Part 147—Maintenance Technician	
Aircraft Airframe	
Aircraft Powerplant	

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 previous page.

BSET: Aircraft Engineering Technology

The BSET degree combines the aviation maintenance program with selected engineering courses and thus prepares the individual for activities between the pure engineer and a skilled craftsman (licensed A & P Technician).

Maintenance area courses (see below)	52
Technical core	20
MECT285, 326, 355, 370, 375	
Degree core	24
General Education requirement	<u>59</u>
Total credits for degree	155

BT: Aviation Technology

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

performance, teaching, and analysis of maneuvers and procedures for the multi-engine airplane. *Fall, Spring, Summer*

AFLT469 (2)
Instrument Ground Instructor

Prepares the student for the FAA instrument ground-instructor 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 aerody-

namics 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 must have been completed.

Fall, Spring

AVMT237

Alt (4)

Aircraft Hydraulic, Pneumatic, and Landing Gear Systems

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