Aviation Maintenance Technology (AMT, AVAC, & AVPC)

Aviation Maintenance Technology (AMT)

The Aviation Maintenance Technology program provides students with the skills needed to keep aircraft operating safely and efficiently by servicing, repairing, and overhauling aircraft components and systems. Coursework covers every system of today's aircraft.

Graduates of the program earn an Associate of Applied Science degree and are prepared to take the FAA licensing tests for Airframe Mechanic and Powerplant Mechanic.

For more information, please contact the Engineering and Information Technologies Division at (513) 569-1743.

To apply for this program at Cincinnati State, visit the Admissions (http://www.cincinnatistate.edu/academics/admission) section of the College website.

Aviation Mechanics Airframe Certificate (AVAC)

The Aviation Mechanics Airframe Certificate includes the study of aircraft structures and hydraulic, electrical, and landing gear systems. Lab experiences include aircraft inspection, troubleshooting, and repair.

Following successful completion of the Airframe Certificate requirements, students may take Federal Aviation Administration (FAA) licensing tests. Certification requirements are subject to current FAA requirements and may change without notice.

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Aviation Mechanics Powerplant Certificate (AVPC)

The Aviation Mechanics Powerplant Certificate includes the study of all types of aircraft engines (small and large piston, and jet), along with the study of engine systems and propellers. Lab experiences include inspection, troubleshooting, and repair of aircraft engines.

Following successful completion of the certificate, students may take Federal Aviation Administration (FAA) licensing tests. Certification requirements are subject to current FAA regulations and may change without notice.

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Aviation Maintenance Technology (AMT)

Semester 1		**Lec**	**Lab**	**Credits**
AMT 100	Aviation Standard Practices (**B**)	4	6	6
AMT 105	Aircraft Orientation (**B**)	2	5	4
AMT 110	Aircraft Electricity (**B**)	3	3	4
AMT 115	Aircraft Weight and Balance (**B**)	3	3	4
MAT 122	Aviation Mathematics (**G**)	2	2	3
FYE 1XX First Year Experience Elective (**B**)		1	0	1
Semester 2				
AMT 135	Aircraft Landing Gear Systems (**T**)	3	5	5
AMT 140	Airframe Electrical Systems (**T**)	3	4	5
PHY 115	Aviation Maintenance Physics (**G**)	3	3	4
AMT 120	Aircraft Non-Metal Structures (**T**)	3	4	5
ENG 101	English Composition 1 (**G**)	3	0	3
Semester 3				
AMT 125	Aircraft Metal Structures (**T**)	3	5	5
AMT 145	Airframe Electronic Systems (**T**)	3	3	4
AMT 150	Airframe Systems (**T**)	3	4	5
AMT 190	Career Preparation: Aviation Maintenance Technology (**B**)	1	0	1
AMT 165	Airframe Maintenance and Inspection (**T**)	4	4	6
Semester 4				
AMT 191	Part-Time Cooperative Education 1: Aviation Maintenance Technology (**T**)	1	20	1
ENG 104	English Composition 2: Technical Communication (**G**)	3	0	3
AMT 201	Powerplant Maintenance 1 (**T**)	4	6	6
AMT 215	Aircraft Propellers (**T**)	2	2	3
Semester 5				
AMT 192	Part-Time Cooperative Education 2: Aviation Maintenance Technology (**T**)	1	20	1
AMT 202	Powerplant Maintenance 2 (**T**)	4	6	6
AMT 205	Starting and Ignition Systems (**T**)	2	3	3
Semester 6				
AMT 193	Part-Time Cooperative Education 3: Aviation Maintenance Technology (**T**)	1	20	1

AMT 203	Powerplant Maintenance 3 (**T**)	4	6	6
AMT 210	Engine Fuel and Lubrication Systems (**T**)	4	6	6
PHI 110	Ethics (**G**)	3	0	3
Total Credits:		**73**	**140**	**104**

Electives

First Year Experience Elective		
FYE 100	Essentials for College Success	1
FYE 105	Skills for College and Personal Success	2
FYE 110	Intensive College Success Strategies	3

Some courses are offered in alternative versions identified with a letter after the course number-- for example, ENG 101 and ENG 101A.

- This curriculum displays only course numbers without the added letter.
- The alternative version, when available, meets the requirements of the course version without the added letter.

The letters G, B, and T (displayed after course titles or elective descriptions) identify types of courses required by the Ohio Department of Higher Education as part of an associate's degree curriculum.

G = General Education course in this curriculum

B = Basic Skills course in this curriculum

T = Technical course in this curriculum

Aviation Mechanics Airframe Certificate (AVAC)

Semester 1		**Lec**	**Lab**	**Credits**
AMT 100	Aviation Standard Practices	4	6	6
AMT 105	Aircraft Orientation	2	5	4
AMT 110	Aircraft Electricity	3	3	4
AMT 115	Aircraft Weight and Balance	3	3	4
MAT 122	Aviation Mathematics	2	2	3
Semester 2				
AMT 120	Aircraft Non-Metal Structures	3	4	5
AMT 135	Aircraft Landing Gear Systems	3	5	5
AMT 140	Airframe Electrical Systems	3	4	5
PHY 115	Aviation Maintenance Physics	3	3	4
Semester 3				
AMT 125	Aircraft Metal Structures	3	5	5
AMT 145	Airframe Electronic Systems	3	3	4
AMT 150	Airframe Systems	3	4	5
AMT 165	Airframe Maintenance and Inspection	4	4	6
Total Credits:		**39**	**51**	**60**

Aviation Mechanics Powerplant Certificate (AVPC)

Semester 1		**Lec**	**Lab**	**Credits**
AMT 100	Aviation Standard Practices	4	6	6
AMT 105	Aircraft Orientation	2	5	4
AMT 110	Aircraft Electricity	3	3	4
AMT 115	Aircraft Weight and Balance	3	3	4
MAT 122	Aviation Mathematics	2	2	3
Semester 2				
AMT 201	Powerplant Maintenance 1	4	6	6
AMT 215	Aircraft Propellers	2	2	3
PHY 115	Aviation Maintenance Physics	3	3	4
Semester 3				
AMT 202	Powerplant Maintenance 2	4	6	6
AMT 205	Starting and Ignition Systems	2	3	3
Semester 4				
AMT 203	Powerplant Maintenance 3	4	6	6
AMT 210	Engine Fuel and Lubrication Systems	4	6	6
Total Credits:		**37**	**51**	**55**

Some courses are offered in alternative versions identified with a letter after the course number-- for example, ENG 101 and ENG 101A.

- This curriculum displays only course numbers without the added letter.
- The alternative version, when available, meets the requirements of the course version without the added letter.

Aviation Maintenance Technology (AMT)

- Apply concepts of basic aircraft electricity.
- Determine and document aircraft weight and balance calculations.
- Identify aircraft corrosion and demonstrate aircraft corrosion cleaning techniques.
- Interpret aircraft and powerplant maintenance technical data and engineering drawings.
- Gain experience inspecting and repairing metal and non-metal structures.
- Demonstrate ground operations and servicing of aircraft and powerplants.
- Identify and apply Federal Aviation Administration (FAA) Regulation Maintenance Standards.
- Complete appropriate FAA required maintenance forms and records for aircraft maintenance.
- Recognize FAA Airworthiness Directives, Type Certificate Data Sheets, and Approved and Acceptable Data sheets.
- Complete maintenance on aircraft turbine engine and piston engines.

Courses

AMT 100 Aviation Standard Practices
6 Credits. 4 Lecture Hours. 6 Lab Hours.
A course that uses FAA-approved instruction for foundation concepts and techniques in aviation maintenance. Topics include: fluid lines and fittings, materials and processes, and cleaning and corrosion control.
Prerequisites: None

AMT 105 Aircraft Orientation
4 Credits. 2 Lecture Hours. 5 Lab Hours.
A course on foundation concepts in aviation maintenance. Topics include: aircraft drawings, ground operations and servicing, mechanic privileges, and basic concepts of physics.
Prerequisites: None

AMT 110 Aircraft Electricity
4 Credits. 3 Lecture Hours. 3 Lab Hours.
A course that uses FAA-approved instruction for foundation concepts and techniques in aviation maintenance.Topics include: basic concepts of math, physics, and electricity; aircraft drawings; and maintenance forms and records.
Prerequisites: MAT 093 or appropriate placement

AMT 115 Aircraft Weight and Balance
4 Credits. 3 Lecture Hours. 3 Lab Hours.
A course on foundation concepts and techniques related to aircraft weight and balance. Topics include: maintenance forms and records, and maintenance publications.
Prerequisites: MAT 093 or appropriate placement

AMT 120 Aircraft Non-Metal Structures
5 Credits. 3 Lecture Hours. 4 Lab Hours.
A course on wood structures, aircraft covering, aircraft finishes, and inspection of bonded structures.
Prerequisites: AMT 105

AMT 125 Aircraft Metal Structures
5 Credits. 3 Lecture Hours. 5 Lab Hours.
A course on repairing and maintaining sheet metal structures. Topics include: selecting and installing rivets and fasteners, forming and bending sheet metal, and laying out repairs.
Prerequisites: AMT 100 and AMT 105

AMT 130 Aircraft Welding Processes
3 Credits. 2 Lecture Hours. 2 Lab Hours.
A course on welding of magnesium, titanium, aluminum, and steel in aircraft. The course does not prepare students for certification specific to welding.
Prerequisites: None

AMT 135 Aircraft Landing Gear Systems
5 Credits. 3 Lecture Hours. 5 Lab Hours.
A course on repairing and maintaining aircraft landing gear systems and hydraulic and pneumatic power systems.
Prerequisites: AMT 105 and MAT 122 or appropriate placement

AMT 140 Airframe Electrical Systems
5 Credits. 3 Lecture Hours. 4 Lab Hours.
A course on troubleshooting aircraft electrical systems and inspecting direct current generators.
Prerequisites: AMT 105 and AMT 110

AMT 145 Airframe Electronic Systems
4 Credits. 3 Lecture Hours. 3 Lab Hours.
A course on aircraft instrument systems and communication and navigation systems.
Prerequisites: AMT 105 and AMT 110

AMT 150 Airframe Systems
5 Credits. 3 Lecture Hours. 4 Lab Hours.
A course on systems for cabin atmosphere and control, position and warning, ice and rain control, fire protection, water and waste systems, and aircraft fuel.
Prerequisites: AMT 100 and AMT 105 and AMT 110

AMT 165 Airframe Maintenance and Inspection
6 Credits. 4 Lecture Hours. 4 Lab Hours.
A course on assembly, rigging, and inspection of aircraft airframes and related systems and sub-systems.
Prerequisites: AMT 100 and AMT 105

AMT 190 Career Preparation: Aviation Maintenance Technology
1 Credit. 1 Lecture Hour. 0 Lab Hour.
A course on career planning and exploration for students in Aviation Maintenance Technologies. Topics include: self assessment, career research, resume development, interview skills, job search strategies, and cooperative education policies and procedures.
Prerequisites: None

AMT 191 Part-Time Cooperative Education 1: Aviation Maintenance Technology
1 Credit. 1 Lecture Hour. 20 Lab Hours.
Students seeking an associate's degree participate in their first part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: AMT 100

AMT 192 Part-Time Cooperative Education 2: Aviation Maintenance Technology
1 Credit. 1 Lecture Hour. 20 Lab Hours.
Students seeking an associate's degree participate in their first part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: AMT 191

AMT 193 Part-Time Cooperative Education 3: Aviation Maintenance Technology
1 Credit. 1 Lecture Hour. 20 Lab Hours.
Students seeking an associate's degree participate in their third part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: AMT 192

AMT 194 Part-Time Cooperative Education 4: Aviation Maintenance Technology
1 Credit. 1 Lecture Hour. 20 Lab Hours.
Students seeking an associate's degree participate in their fourth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: AMT 193

AMT 195 Part-Time Cooperative Education 5: Aviation Maintenance Technology
1 Credit. 1 Lecture Hour. 20 Lab Hours.
Students seeking an associate's degree participate in their fifth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: AMT 194

AMT 196 Part-Time Cooperative Education 6: Aviation Maintenance Technology
1 Credit. 1 Lecture Hour. 20 Lab Hours.
Students seeking an associate's degree participate in their sixth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: AMT 195

AMT 201 Powerplant Maintenance 1
6 Credits. 4 Lecture Hours. 6 Lab Hours.
A course that uses FAA-approved instruction for concepts and techniques in inspection and repair of radial engines; overhaul of reciprocation engines; and inspection, check, service and repair of reciprocating engines and engine systems.
Prerequisites: AMT 100 and AMT 105

AMT 202 Powerplant Maintenance 2
6 Credits. 4 Lecture Hours. 6 Lab Hours.
A continuation of AMT 201, using FAA-approved instruction for concepts and techniques in installation, troubleshooting, and removal of reciprocating engines; overhaul of turbine engines; and induction and engine airflow systems.
Prerequisites: AMT 201

AMT 203 Powerplant Maintenance 3
6 Credits. 4 Lecture Hours. 6 Lab Hours.
A continuation of AMT 202, using FAA-approved instruction in the subject areas of inspection, check, service, and repair of turbine engines and turbine engine installations; installation, troubleshooting, and removal of turbine engines; performing powerplant conformity and airworthiness inspection; engine exhaust and reverser systems; unducted fans; and auxiliary power units.
Prerequisites: AMT 202

AMT 205 Starting and Ignition Systems
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A course that uses FAA-approved instruction for concepts and techniques in ignition and starting systems for reciprocating and turbine aircraft engines. Topics include: inspection, troubleshooting, and repair.
Prerequisites: AMT 110 and AMT 201

AMT 210 Engine Fuel and Lubrication Systems
6 Credits. 4 Lecture Hours. 6 Lab Hours.
A course that uses FAA-approved instruction for concepts and techniques in lubrication systems, fuel metering systems, and engine fuel systems.
Prerequisites: AMT 100 and AMT 105

AMT 215 Aircraft Propellers
3 Credits. 2 Lecture Hours. 2 Lab Hours.
A course that uses FAA-approved instruction for concepts and techniques in removal, installation, inspection, and repair of fixed and variable pitch aircraft propellers and propeller governing systems.
Prerequisites: AMT 105 and AMT 115

AMT 250 Unmanned Aerial Systems
3 Credits. 2 Lecture Hours. 2 Lab Hours.
A course on constructing, assembling, inspecting, repairing, and maintaining a small unmanned aerial system (drone). Topics include: designing and constructing a platform, soldering circuit boards and electrical components, programming operating and control systems, assembling propulsion systems, and checking operations.
Prerequisites: None

AMT 255 Unmanned Aerial Systems - Remote Pilot Certification
2 Credits. 1 Lecture Hour. 2 Lab Hours.
A course on safely and legally operating an unmanned aerial system (UAS) as an operator, observer, and operations administrator in compliance with Federal Aviation Regulations. The course also prepares students to successfully complete the Federal Aviation Administration FAR Part 107 Remote Pilot certification exam.
Prerequisites: None

AMT 270 Avionics Orientation
4 Credits. 3 Lecture Hours. 2 Lab Hours.
A course on aircraft and avionics systems topics and terminology. Topics include: aircraft parts, aircraft axis and controls, flight controls, theory of flight, pre- and post-flight inspection, and ground movement and storage of aircraft. The course prepares students to successfully complete the National Center for Aircraft Technician Training exam for Aircraft Electronics Technician.
Prerequisites: None

AMT 271 Avionics 1
2 Credits. 1 Lecture Hour. 3 Lab Hours.
A course on concepts and skills for repair of avionics equipment. Topics include: procedures used by air carriers and repair stations; avionics publications, forms, and records; tools and equipment; buildup of wire bundles; review of Boolean Algebra; and ARINC codes.
Prerequisites: AMT 105

AMT 272 Avionics 2
2 Credits. 1 Lecture Hour. 3 Lab Hours.
A continuation of AMT 271. Topics include: logic gates, troubleshooting analog and digital electronic systems to line replicable units, amplifier theory, on-board navigation and maintenance computer systems, and intercom and passenger entertainment systems.
Prerequisites: AMT 271

AMT 290 FAA General, Airframe, and Powerplant Certification Test Preparation
4 Credits. 4 Lecture Hours. 0 Lab Hour.
A course that prepares students to successfully complete the Federal Aviation Administration (FAA) General, Airframe, and Powerplant written, oral, and practical tests. To enroll in the course, student must be a graduate of a Part 147 school or hold FAA-signed Form 8610-2.
Prerequisites: Graduate of a Part 147 school or hold FAA-signed Form 8610-2

AMT 291 Full-Time Cooperative Education 1: Aviation Maintenance Technology
2 Credits. 1 Lecture Hour. 40 Lab Hours.
Students seeking an associate's degree participate in their first full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: None

AMT 292 Full-Time Cooperative Education 2: Aviation Maintenance Technology
2 Credits. 1 Lecture Hour. 40 Lab Hours.
Students seeking an associate's degree participate in their second full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: AMT 291

AMT 293 Full-Time Cooperative Education 3: Aviation Maintenance Technology
2 Credits. 1 Lecture Hour. 40 Lab Hours.
Students seeking an associate's degree participate in their third full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: AMT 292

AMT 294 Internship 1: Aviation Maintenance Technology
2 Credits. 1 Lecture Hour. 40 Lab Hours.
Students seeking an associate's degree participate in their first unpaid field learning experience related to their degree. Students must follow applicable policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: AMT 100

AMT 295 Internship 2: Aviation Maintenance Technology
2 Credits. 1 Lecture Hour. 40 Lab Hours.
Students seeking an associate's degree participate in their second unpaid field learning experience related to their degree. Students must follow applicable policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: AMT 294