

Aeronautics

Airframe Maintenance Technician

Program Description

Practical and theoretical knowledge in basic maintenance techniques, plus the special requirements of either airframe or powerplant work. Upon satisfactory completion of the required courses, the student is eligible to take the Federal Aviation Administration written oral and practical examination for airframe or powerplant license.

Certificate of Achievement and Associate in Science Degree

A Certificate of Achievement can be obtained upon completion of one of the 41-unit majors listed below. An Associate in Science Degree can be obtained upon completion of the units required for the major in either Airframe or Powerplant or Airframe and Powerplant and general education requirements.

The Federal Aviation Administration (FAA) requires 1150 hours (four full semesters) of instruction to complete the Airframe or Powerplant curriculum. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes

Students who completes the Airframe Maintenance Technician Certificate of Achievement/ Associate Degree will be able to:

1. Demonstrate proficient, entry-level aviation maintenance skills in airframe and powerplant with emphasis on aircraft engines, aircraft structures, and aircraft systems.
2. Have a working knowledge to inspect, maintain, service and repair aircraft electrical, engine (piston and turbine), airframe structure, flight control, hydraulic, pneumatic, fuel, navigation and instrument systems and other aircraft components specified by Federal Aviation Regulation Part 147.
3. Obtain an FAA, Airframe and Powerplant License upon completion of the Federal Aviation Administration (FAA) knowledge, oral, practical and written examination in general, airframe, and powerplant subjects.

REQUIRED COURSES	Units
AERO 055 Aviation Maintenance Technician General I	10
AERO 102 Airframe Maintenance I	10
AERO 103 Aviation Maintenance Technician General II	10
AERO 105 Airframe Maintenance II	10
AERO 118 FAA Airframe Test Review & Qualification.	1
Total Units	41

Recommended Electives:
AERO 150 FAA Special Projects-Airframe Enhancement
OCED 070 Occupational Soft Skills
OCED 090 Occupational Work Experience
OCED 091 General Work Experience

To obtain the combination Airframe & Powerplant Maintenance Technician certificate or degree (an additional 750 hours, 2 semesters), also complete the three courses listed below: Units

AERO 106 Powerplant Maintenance I	10
AERO 107 Powerplant Maintenance II	10
AERO 119 FAA Powerplant Test Review & Qualification.	1
Total Units	21

These programs are Gainful Employment Programs. For additional information, please visit http://www.solano.edu/gainful_employment/ and select "Aeronautics Airframe Maintenance Technician," "Aeronautics Powerplant Maintenance Technician," or Aeronautics Airframe & Powerplant Maintenance Technician."

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Powerplant Maintenance Technician

Program Description

Practical and theoretical knowledge in basic maintenance techniques, plus the special requirements of either airframe or powerplant work. Upon satisfactory completion of the required courses, the student is eligible to take the Federal Aviation Administration written, oral and practical examination for airframe or powerplant license.

Certificate of Achievement and Associate in Science Degree

A Certificate of Achievement can be obtained upon completion of one of the 41-unit majors listed below. An Associate in Science Degree can be obtained upon completion of the units required for the major in either Airframe or Powerplant or Airframe and Powerplant and general education requirements.

The Federal Aviation Administration (FAA) requires 1150 hours (four full semesters) of instruction to complete the Airframe or Powerplant curriculum. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes

Students who complete the Powerplant Maintenance Technician Certificate of Achievement/ Associate Degree will be able to:

1. Demonstrate proficient, entry-level aviation maintenance skills in airframe and powerplant with emphasis on aircraft engines, aircraft structures, and aircraft systems.
2. Have a working knowledge to inspect, maintain, service and repair aircraft electrical, engine (piston and turbine), airframe structure, flight control, hydraulic, pneumatic, fuel, navigation and instrument systems and other aircraft components specified by Federal Aviation Regulation Part 147.
3. Obtain an FAA, Airframe and Powerplant License upon completion of the Federal Aviation Administration (FAA) knowledge, oral, practical and written examination in general, airframe, and powerplant subjects.

REQUIRED COURSES	Units
AERO 055 Aviation Maintenance Technician General I	10
AERO 103 Aviation Maintenance Technician General II	10
AERO 106 Powerplant Maintenance I	10
AERO 107 Powerplant Maintenance II	10
AERO 119 FAA Powerplant Test Review & Qualification	1
Total Units	41

Recommended Electives :

AERO 150 FAA Special Projects-Airframe Enhancement
OCED 070 Occupational Soft Skills
OCED 090 Occupational Work Experience
OCED 091 General Work Experience

To obtain the combination Airframe & Powerplant Maintenance Technician certificate or degree (an additional 750 hours, 2 semesters), also complete the three courses listed below:	Units
AERO 102 Airframe Maintenance I	10
AERO 105 Airframe Maintenance II	10
AERO 118 FAA Airframe Test Review & Qualification	1
Total Units	21

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AERO 055 **10.0 Units**
Aviation Maintenance Technician General I

Course Advisory: SCC Minimum English and Math standards. Presents the fundamentals necessary for the advanced study in Aeronautics. It will define the history of aviation and powerplant operation, and the study of flight: aircraft weight and balance, ground operation and servicing, mathematics, maintenance forms and records, basic physics, maintenance publication, and mechanic privileges and limitation. Safety is stressed throughout the course. In addition, this course is a study of the methods and processes used in the production of an aircraft, including shop safety. The course includes fundamentals in the use of hand tools and power equipment, aircraft drawings, cleaning, corrosion control; and the processes used by the manufacturers for aircraft construction. *Five hours lecture, fifteen hours lab.*

AERO 102 **10.0 Units**
Airframe Maintenance I

Course Advisory: SCC minimum English standard. This course presents the application of fundamental methods, techniques, and practices used in aircraft inspection, maintenance, and repair. The course includes fundamentals of shop safety, wood structures, fabric covering, finishes, composite structures, plastics, sheet-metal structures, welding, assembly and rigging, and airframe inspection. *Five hours lecture, fifteen hours lab.*

AERO 103 **10.0 Units**
Aviation Maintenance Technician General II

Course Advisory: SCC minimum English standard. This course offers a study of fluid control systems and components with emphasis on design, maintainability, testing and system repair. The course includes the fundamentals of hydraulic fluids, fluid carrying lines and fittings, inspection, servicing and testing of pneumatic and hydraulic systems. The course also presents theory and application of direct and alternating current as related to aircraft electrical components and systems. *Five hours lecture, fifteen hours lab.*

AERO 105 **10.0 Units**
Airframe Maintenance II

Course Advisory: SCC minimum English standard. This course offers a detailed study of the fundamentals of fabrication, maintenance, and repair of aircraft airframe systems. The course includes study of all basic systems which include: landing gear, hydraulic, pneumatic, cabin atmospheric control, flight instrumentation, communication, navigation, fuel storage and delivery, ice and rain detection, prevention and removal as well as fire detection and protection systems. *Five hours lecture, fifteen hours lab.*

AERO 106 **10.0 Units**
Powerplant Maintenance I

Course Advisory: SCC minimum English and Math standards. This course is designed to acquaint the student with reciprocating engines. The course includes study in the fundamentals of basic engine design, types and materials of construction, nomenclature, repair, overhaul and servicing, maintainability and reliability concepts. *Five hours lecture, fifteen hours lab.*

AERO 107 **10.0 Units**
Powerplant Maintenance II

Course Advisory: SCC minimum English and Math standard. The course presents a study of the theory, operation, maintenance and repair of the turbine engine and related systems. It gives the student practical hands on experience that will satisfy future employment and FAA requirements. *Five hours lecture, fifteen hours lab.*

AERO 118 **0.5 to 1.50 Units**
FAA Airframe Test Review and Qualification

Course Advisory: SCC minimum English and Math standards. This course is to be taken during the final semester of a student's enrollment in the Aeronautics program. The course consists of a comprehensive oral, practical, and written examination of all material covered in the Airframe Program for the purpose of verifying the students' readiness to pass the Federal Aviation Administration Airframe Examinations. Students may take this course up to the maximum number of units over multiple semesters. *This is an Open Entry/Open Exit course. One and one-half to four and one-half hours lab.*

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AERO 119 **0.5 to 1.50 Units**
FAA Powerplant Test Review & Qualification

Course Advisory: SCC minimum English and Math standards. This course is to be taken during the final semester of a student's enrollment in the Aeronautics program. The course consists of a comprehensive oral, practical, and written examination of all material covered in the Powerplant Program for the purpose of verifying the students readiness to pass the Federal Aviation Administration Powerplant Examinations. Students may take this course up to the maximum number of units over multiple semesters. *This is an Open Entry/Open Exit course. One and one-half to four and one-half hours lab.*

AERO 150 **0.5 to 1.50 Units**
FAA Special Projects and Course Enhancement

Course Advisory: SCC minimum English and Math standards; Any Solano College Aeronautics course (AERO 055-119); or previous training/experience in aeronautics. This course is designed to give Aeronautics students a chance to make up time lost for FAA certificate and/or to work on special projects required by FAA to bring students in line with new FAA FAR Part 66 requirements. Students may take this course up to the maximum number of units over multiple semesters. *This is an Open Entry/Open Exit course. One and one-half to four and one-half hours lab.*

AERO 151 **0.5 to 1.50 Units**
FAA Special Projects - Powerplant Enhancement

Course Advisory: SCC minimum English and Math standards. This course is designed to give Aeronautics students a chance to make up time lost for FAA certificate and/or to work on special projects required by FAA to bring students in line with new FAA FAR Part 66 requirements. The course also allows mechanics to take recurrent training as needed. *This is an Open Entry/Open Exit course. One and one-half to four and one-half hours lab.*