

Aeronautics

Airframe Maintenance Technician

Program Description

Practical and theoretical knowledge in basic maintenance techniques, plus the special requirements of airframe or airframe & 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 the 41-unit major. An Associate in Science Degree can be obtained upon completion of the units required for the 41-unit Airframe major and SCC General Education- Option A.

A combination Airframe & Powerplant Maintenance Technician Certificate of Achievement can be obtained upon completion of the 41-unit airframe major and 21-unit Powerplant courses. An Associate in Science Degree can be obtained upon completion of the 62-unit Airframe and Powerplant courses and SCC General Education - Option A.

The Federal Aviation administration (FAA) requires 1150 hours (four full semesters) of instruction to complete the Airframe curriculum (An additional 750 hours, two full semesters for Airframe and Powerplant). All courses in the major must be completed with a minimum grade of C or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes

Students who complete the Airframe Maintenance Technician or Airframe & 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 the knowledge and skills to pass oral, practical and written Federal Aviation Administration (FAA) examination in general and airframe/ powerplant subjects.

REQUIRED COURSES.....	Units
AERO 055 Aviation Maintenance Technician - General Aircraft Subjects	10
AERO 102 Aviation Maintenance Technician - Airframe Structures	10
AERO 103 Aviation Maintenance Technician - Basic Electricity and Hydraulics.....	10
AERO 105 Aviation Maintenance Technician - Airframe Systems.....	10
AERO 118 Aviation Maintenance Technician - FAA Airframe Test Preparation.....	1
Required Major Total units.....	41

Combined Airframe & Powerplant Maintenance Technician Required Courses	(In addition to the 41.0 Units listed above)..... Units
AERO 106 Aviation Maintenance Technician - Powerplant Reciprocating Engines	10
AERO 107 Aviation Maintenance Technician - Powerplant Turbine Engines.....	10
AERO 119 Aviation Maintenance Technician - FAA Powerplant Test Preparation.....	1
Required Major Total units.....	21

Solano General Education.....	21
Electives (as needed to reach 60 units).....	0
Total Degree Units Airframe	62
Total Degree Units Airframe/Powerplant	83

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

Aeronautics

Powerplant Maintenance Technician

Program Description

Practical and theoretical knowledge in basic maintenance techniques, plus the special requirements of either powerplant or airframe & 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 powerplant or airframe & powerplant license.

Certificate of Achievement and Associate in Science Degree

A Certificate of Achievement can be obtained upon completion of the 41-unit major. An Associate in Science Degree can be obtained upon completion of the 41-unit Powerplant major and SCC General Education - Option A.

A combination Airframe & Powerplant Maintenance Technician Certificate of Achievement can be obtained upon completion of the 41-unit Powerplant major and 21-unit Airframe courses. An Associate in Science Degree can be obtained upon completion of the 62-unit Airframe and Powerplant courses and SCC General Education - Option A.

The Federal Aviation Administration (FAA) requires 1150 hours (four full semesters) of instruction to complete the Powerplant curriculum (An additional 750 hours, two full semesters for Airframe and Powerplant). All courses in the major must be completed with a minimum grade of C or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes

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

1. Demonstrate proficient, entry-level aviation maintenance skills in powerplant or 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 the knowledge and skills to pass oral, practical and written Federal Aviation Administration (FAA) examination in general and airframe/powerplant subjects.

REQUIRED COURSES	Units
AERO 055 Aviation Maintenance Technician - General Aircraft Subjects	10
AERO 103 Aviation Maintenance Technician - Basic Electricity and Hydraulics.....	10
AERO 106 Aviation Maintenance Technician - Powerplant Reciprocating Engines	10
AERO 107 Aviation Maintenance Technician - Powerplant Turbine Engines.....	10
AERO 119 Aviation Maintenance Technician - FAA Powerplant Test Preparation	1
Total units	41

Combined Airframe & Powerplant Maintenance Technician Certificate or Degree Required Courses (In addition to 750 hours, 2 semesters)	Units
AERO 102 Aviation Maintenance Technician - Airframe Structures	10
AERO 105 Aviation Maintenance Technician - Airframe Systems.....	10
AERO 118 Aviation Maintenance Technician - FAA Airframe Test Preparation.....	1
Total Units	21
Solano General Education	21
Electives (as needed to reach 60 units)	0
Total Degree Units Powerplant	62
Total Degree Units Airframe/Powerplant	83

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

Aeronautics

AERO 055 Aviation Maintenance Technician - General Aircraft Subjects <i>Transferable to CSU</i> <i>Hours: 80-90 lecture, 240-270 lab</i> 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.	10.0 Units	AERO 105 Aviation Maintenance Technician - Airframe Systems <i>Hours: 80-90 lecture, 240-270 lab</i> 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.	10.0 Units
AERO 102 Aviation Maintenance Technician - Airframe Structures <i>Hours: 80-90 lecture, 240-270 lab</i> 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.	10.0 Units	AERO 106 Aviation Maintenance Technician - Powerplant Reciprocating Engines <i>Hours: 80-90 lecture, 240-270 lab</i> 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.	10.0 Units
AERO 103 Aviation Maintenance Technician - Basic Electricity and Hydraulics <i>Hours: 80-90 lecture, 240-270 lab</i> 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.	10.0 Units	AERO 107 Aviation Maintenance Technician - Powerplant Turbine Engines <i>Hours: 80-90 lecture, 240-270 lab</i> 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.	10.0 Units
		AERO 118 Aviation Maintenance Technician - FAA Airframe Test Preparation <i>Hours: 24-81 lab</i> 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.	0.5 to 1.5 Units

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AERO 119

0.5 to 1.5 Units

Aviation Maintenance Technician - FAA Powerplant Test Preparation

Hours: 24-81 lab

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.

AERO 150

0.5 to 1.5 Units

Aviation Maintenance Technician - FAA Special Projects and Course Enhancement

Course Advisory: Any Solano College Aeronautics course (AERO 055-119); or previous training/experience in aeronautics

Hours: 24-81 lab

Gives 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.

AERO 151

0.5 to 1.5 Units

Aviation Maintenance Technician - FAA Special Projects - Powerplant Enhancement

Hours: 24-81 lab

Gives 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.