GAVILAN COLLEGE
5055 Santa Teresa Blvd
Gilroy, CA 95023

Course Outline

COURSE: AMT 101 DIVISION: 50 ALSO LISTED AS:

TERM EFFECTIVE: Spring 2021 CURRICULUM APPROVAL DATE: 10/13/2020

SHORT TITLE: GEN AIRCRAFT TECH

LONG TITLE: General Aircraft Technology

Units	Number of Weeks	Type	Contact Hours/Week	Total Contact Hours/Units
9	18	Lecture:	7.5	135 / 7.5 Units of Lecture
		Lab:	5	90 / 1.5 Units of Lab
		Other:	0	0
		Total:	12.5	225

Out of Class Hrs:	270.00
Total Learning Hrs:	000.00

COURSE DESCRIPTION:

This course is an FAA Part 147 course designed to prepare the student for their FAA Airframe and Powerplant (A and P) certificate. This course will provide the student with a thorough understanding of the use of maintenance publications, maintenance forms and records with emphasis on A and P mechanic

and limitations. Basic electricity for aircraft from Ohm's Law through transistor theory will be taught as well as ground operation and servicing of aircraft. Both theory and practical application to aircraft are taught. Approval from a Gavilan College counselor must be obtained before registering for this class. COREQUISITE: AMT 111, Airframe Structures. ADVISORY: Mathematics 430.

COREQUISITES:
AMT 111

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES
L - Standard Letter Grade

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

02 - Lecture and/or discussion

03 - Lecture/Laboratory

04 - Laboratory/Studio/Activity

04A - Laboratory - LEH 0.65

STUDENT LEARNING OUTCOMES:

By the end of this course, a student should:

1. Demonstrates the ability to meet the written test standards outlined in FAA AC 147-3 ? Certification and Operation of Aviation Maintenance Technician Schools.

2. Demonstrates the ability to meet the oral/practical test standards outlined in FAA AC 147-3 ? Certification and Operation of Aviation Maintenance Technician Schools.

3. Demonstrate the ability to inspect and determine if components and aircrafts meet airworthy standards outlined in FAA AC 43.13-1B ? Acceptable Methods, Techniques, and Practices ? Aircraft Inspection and Repair.

COURSE CONTENT:

Curriculum Approval Date: 10/13/2020

Lecture Content:

30 Hours

FEDERAL AVIATION REGULATIONS

CONTENT: F.A.R Part I, Definitions and Abbreviations, F.A.R. Part 65, Certification of Airmen other than flight crew. F.A.R. Part 43, Maintenance, repair and alteration, F.A.R. Part 91, General operating flight rules, F.A.R. Part 39, Airworthiness directives, F.A.R. Part 45, Identification and registration marks, F.A.R. Part 47, Certification of repair stations, F.A.R. Part 147, Certification of Aviation Technical Schools.

STUDENT PERFORMANCE OBJECTIVES: Identify Federal Aviation Regulations, list requirements for maintenance, repair, alterations, and required inspections of United States Certificated Aircraft. Recognize the requirements for certification as an Aircraft Maintenance Technician with Airframe and Powerplant ratings and will recognize the privileges and limitations for each rating, and recognize the certification requirements for repairmen working for certificated repair stations.

22.5 Hours

AIRCRAFT MAINTENANCE FORMS AND RECORDS

CONTENT: The requirements for making legal aircraft maintenance record entries for repairs, maintenance, alterations, required inspections will be identified. The completion of all requirements F.A.A. forms, including F.A.A. FORM 337 Major Repair and Alteration, F.A.A. FORM 8010-4 Malfunction and Defect Report.

STUDENT PERFORMANCE OBJECTIVES: Demonstrate the ability to complete all required aircraft maintenance record entries in accordance with F.A.A. requirements. Demonstrate the ability to complete F.A.A. 337, Major Repair and Alteration Form without error.

22.5 Hours

AIRCRAFT GROUND OPERATION AND SERVICING

CONTENT: The ground movement of aircraft i.e. towing and taxi will be presented. The jacking and hoisting of various types of aircraft will be presented. The tie down and security of aircraft and related components will be discussed. The servicing of electrical, hydraulic, and oxygen systems will be presented to include auxiliary and ground power units. The servicing of fuel systems both fueling and defueling with emphasis on fire safety will be presented. The identification and application of fire extinguisher agents will be discussed. Safe shop procedures with regard to electrical equipment, compressed gases, cutting tools will be presented with emphasis on safety.

STUDENT PERFORMANCE OBJECTIVE: Demonstrate the ability to tow and taxi aircraft in a safe manner. Demonstrate the ability to jack and hoist aircraft in a safe manner. Demonstrate the ability to service aircraft systems I.E. electrical, hydraulic, lubrication, and fuel systems in accordance with manufacturers service instructions. Demonstrate the ability to fuel and defuel various aircraft, in a safe manner, with emphasis on fire safety. Identify the various types of fire extinguishers and choose the correct extinguisher for a given type of fire.

COURSE CONTENT(CONTINUED):

25 Hours

MATHEMATICS FOR AIRCRAFT MAINTENANCE

CONTENT: Addition, subtraction, multiplication and division of positive and negative numbers will be presented. The calculation of area and volume of various geometrical shapes will be presented. The extraction of roots and the conversion of numbers to powers I.E. scientific notation will be presented. Problems involving the calculation of ratio, proportion and percentage will also be presented.

STUDENT PERFORMANCE OBJECTIVE: Demonstrate the ability to solve problems involving addition, subtraction, multiplication, division of positive and negative numbers. Demonstrate the ability to solve problems involving area,

volume, ratio, proportion and percentage. Demonstrate the ability to solve problems involving the extraction of roots and conversions of numbers to powers of ten.

33 Hours

BASIC ELECTRICITY

CONTENT: Basic electricity direct current will be presented, the relationship of voltage, amperage resistance and power with regard to OHM's Law will be presented. Basic types of electrical circuits will be discussed. The various sources of electrical energy will be presented aircraft storage batteries lead/acid nickel cadmium will be presented, electrical wiring installation, repair and maintenance will be presented.

STUDENT PERFORMANCE OBJECTIVE: Calculate the values of voltage, amperage, resistance and power in series, parallel and complex electrical circuits using OHMS's Law. Explain how electrical power is generated by various methods. Explain the chemical changes that take place during discharge and charge cycles of aircraft storage batteries and will be able service and install them. Inspect, install, maintain and repair electrical wiring and circuit protection devices. Troubleshoot electrical circuits using the correct type of meter.

2 Hours

Final.

Lab Content:

30 Hours

FEDERAL AVIATION REGULATIONS

LAB PROJECTS: Demonstrate the ability to perform preventative maintenance, repairs and alterations on assigned aircraft and component parts.

15 Hours

AIRCRAFT MAINTENANCE FORMS AND RECORDS

LAB PROJECTS: Make sample maintenance record entries and will complete F.A.A. FORM 337, Major Repair and Alteration Form, F.A.A. FORM 8010-4 Malfunction and Defect Report and other Maintenance Forms.

15 Hours

AIRCRAFT GROUND OPERATION AND SERVICING

LAB PROJECTS: Demonstrate the ability to perform ground operation and servicing activities.

28 Hours

BASIC ELECTRICITY

LAB PROJECTS: Calculate the total inductance, total capacitance, total resistance and impedance of A/C electrical circuits. Calculate the voltage and current values in transformers. Explain the function of amplifiers, solid state diodes and transistors. Troubleshoot circuits using the correct type of meter.

2 Hours

Final

METHODS OF INSTRUCTION:
Lecture, audio-visual aids, demonstration, guided practice

METHODS OF EVALUATION:
Writing assignments
Percent of total grade: 20.00 %
Percent range of total grade: 20% to 30% Written Homework, Term or Other Papers

Problem-solving assignments
Percent of total grade: 15.00 %
Percent range of total grade: 15% to 25% Homework Problems, Exams

Skill demonstrations
Percent of total grade: 20.00 %
Percent range of total grade: 10% to 20% Class Performance/s

Objective examinations
Percent of total grade: 45.00 %
Percent range of total grade: 35% to 45% Multiple Choice

OUT OF CLASS ASSIGNMENTS:
Required Outside Hours: 60
Assignment Description:
FEDERAL AVIATION REGULATIONS
HOMEWORK: Complete reading assignments and answer question sheets.

Required Outside Hours: 45
Assignment Description:
AIRCRAFT MAINTENANCE FORMS AND RECORDS
HOMEWORK: The student will complete reading assignments and answer question sheets.

Required Outside Hours: 45
Assignment Description:
AIRCRAFT GROUND OPERATION AND SERVICING
HOMEWORK: The student will complete reading assignments and answer question sheets.

Required Outside Hours: 50
Assignment Description:
MATHEMATICS FOR AIRCRAFT MAINTENANCE
HOMEWORK: The student will complete reading assignments and answer question sheets.

Required Outside Hours: 70
Assignment Description:
BASIC ELECTRICITY
HOMEWORK: Complete reading assignments and answer question sheets

REPRESENTATIVE TEXTBOOKS:

Dale Crane. Aviation Mechanic Handbook: The Aviation Standard - 6th Edition. Aviation Supplies & Academics, Inc.,2017.

The previous book is not longer published. This is the replacement and most current edition based on industry standards.

ISBN: 978-1619544949

Reading Level of Text, Grade: Reading level of text, Grade: 12th Verified by: Verified by: MS Word

F.A.A. F.A.A., Acceptable Methods, Techniques, and Practices - Aircraft Inspection and Repair AC43.13-1B/2B. ASA,2008.

This is a FAA standards document. It is the latest and most current document released by the FAA.

ISBN: 978-1619540217

Reading Level of Text, Grade: Reading level of text, Grade: 12th Verified by: Verified by: MS Word

F.A.A.. Aviation Maintenance Technician Handbook-General: FAA-H-8083-30A. Aviation Supplies and Academics, Inc.,2018.

This is the most current version released by the FAA.

ISBN: ISBN: 978-1619546929

Reading Level of Text, Grade: Reading level of text, Grade: 12th Verified by: Verified by: MS Word

ARTICULATION and CERTIFICATE INFORMATION

CSU TRANSFER:

Transferable CSU

UC TRANSFER:

Not Transferable

SUPPLEMENTAL DATA:

Basic Skills: N
Classification: Y
Noncredit Category: Y
Cooperative Education:
Program Status: 1 Program Applicable
Special Class Status: N
CSU Crosswalk Course Department: AMT
CSU Crosswalk Course Number: 101
Prior to College Level: Y
Non Credit Enhanced Funding: N
Funding Agency Code: Y
In-Service: N
Occupational Course: C
Course Control Number: CCC000571738
Sports/Physical Education Course: N
Taxonomy of Program: 095000
CIP: