Course Outline

COURSE: AMT 101
DIVISION: 50
ALSO LISTED AS:

TERM EFFECTIVE: Spring 2018
CURRICULUM APPROVAL DATE: 03/27/2017

SHORT TITLE: GEN AIRCRAFT TECH
LONG TITLE: General Aircraft Technology

<table>
<thead>
<tr>
<th>Units</th>
<th>Number of Weeks</th>
<th>Type</th>
<th>Contact Hours/Week</th>
<th>Total Contact Hours</th>
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<td>Lecture</td>
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<td></td>
<td></td>
<td>Lab</td>
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<td>Total</td>
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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 privileges 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.


PREREQUISITES:

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
STUDENT LEARNING OUTCOMES:
1. The student demonstrates the ability to meet the written test standards outlined in FAA AC 147-3 – Certification and Operation of Aviation Maintenance Technician Schools.
   Measure of assessment: Homework assignments, quizzes and written tests.
2. The student demonstrates the ability to meet the oral/practical test standards outlined in FAA AC 147-3 – Certification and Operation of Aviation Maintenance Technician Schools.
   Measure of assessment: Shop/lab projects and oral/practical demonstrations
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.
   Measure of assessment: Shop/lab projects and oral/practical demonstrations

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS
Curriculum Approval Date: 03/27/2017
50 Hours
FEDERAL AVIATION REGULATIONS
HOMEWORK: Complete reading assignments and answer questions sheets.
STUDENT PERFORMANCE OBJECTIVES: The student will be able to identify Federal Aviation Regulations, to list requirements for maintenance, repair, alterations, and required inspections of United States Certificated Aircraft. The student will 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, the student will also recognize the certification requirements for repairmen working for certificated repair stations.
LAB PROJECTS: The student will demonstrate the ability to perform preventative maintenance, repairs and alterations on assigned aircraft and component parts.
37.5 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: The student will demonstrate the ability to complete all required aircraft maintenance record entries in accordance with F.A.A. requirements. The student will also demonstrate the ability to complete F.A.A. 337, Major Repair and Alteration Form without error.
HOMEWORK: The student will complete reading assignments and answer question sheets.
LAB PROJECTS: The student will 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.
37.5 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.

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Safe shop procedures with regard to electrical equipment, compressed gases, cutting tools will be presented with emphasis on safety.

HOMEWORK: The student will complete reading assignments and answer question sheets.

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

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.

HOMEWORK: The student will complete reading assignments and answer question sheets.

STUDENT PERFORMANCE OBJECTIVE: The student will demonstrate the ability to solve problems involving addition, subtraction, multiplication, division of positive and negative numbers. The student will also demonstrate the ability to solve problems involving area, volume, ratio, proportion and percentage. The student will also demonstrate the ability to solve problems involving the extraction of roots and conversions of numbers to powers of ten.

LAB PROJECTS: The student will solve mathematical problems involving various aircraft maintenance tasks I.E. aircraft weight and balance, fluid mechanics, engine compression ratio, aircraft sheet metal repair.

50 Hours

BASIC ELECTRICITY D.C.

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: The student will be able to calculate the values of voltage, amperage, resistance and power in series, parallel and complex electrical circuits using OHMS's Law. The student will be able to explain how electrical power is generated by various methods. The student will be able to explain the chemical changes that take place during discharge and charge cycles of aircraft storage batteries and will be able service and install them.

The student will be able to inspect, install, maintain and repair electrical wiring and circuit protection devices. The student will be able to troubleshoot electrical circuits using the correct type of meter.

HOMEWORK: Complete reading assignments and answer question sheets.

LAB PROJECTS: The student will calculate the total inductance, total capacitance, total resistance and impedance of A/C electrical circuits. The student will calculate the voltage and current values in transformers. The student will explain the function of magnetic amplifiers, vacuum tubes and solid state diodes and transistors. The student will troubleshoot A/C 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: 10.00%
Percent range of total grade: 10% to 20% Class Performance/s
Objective examinations
Percent of total grade: 35.00%
Percent range of total grade: 35% to 45% Multiple Choice

OUT OF CLASS ASSIGNMENTS:
Required Outside Hours: 10
Assignment Description:
FEDERAL AVIATION REGULATIONS
HOMEWORK: Complete reading assignments and answer question sheets.
Required Outside Hours: 8
Assignment Description:
AIRCRAFT MAINTENANCE FORMS AND RECORDS
HOMEWORK: The student will complete reading assignments and answer question sheets.
Required Outside Hours: 8
Assignment Description:
AIRCRAFT GROUND OPERATION AND SERVICING
HOMEWORK: The student will complete reading assignments and answer question sheets.
Required Outside Hours: 10
Assignment Description:
MATHEMATICS FOR AIRCRAFT MAINTENANCE
HOMEWORK: The student will complete reading assignments and answer question sheets.
Required Outside Hours: 15
Assignment Description:
BASIC ELECTRICITY
HOMEWORK: Complete reading assignments and answer question sheets

REPRESENTATIVE TEXTBOOKS:
Required:
ISBN: 978-1560277163
Reading level of text, Grade: 12th Verified by: MS Word
Required:
ISBN: 978-1-56027-728-6
Reading level of text, Grade: 12th Verified by: MS Word
Required:
Reading level of text, Grade: 12th Verified by: MS Word
Other textbooks or materials to be purchased by the student: The student will be required to provide basic tools.
ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:
CSU GE:
IGETC:
CSU TRANSFER:
    Transferable CSU, effective 199050
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
CAN:
CAN Sequence:
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
Maximum Hours:
Minimum Hours:
Course Control Number: CCC000571738
Sports/Physical Education Course: N
Taxonomy of Program: 095000