

**Florida Department of Education
CURRICULUM FRAMEWORK**

Program Title:	AVIATION MAINTENANCE TECHNOLOGY
Occupational Area:	Industrial Education PSAV
Components	Core, Two Programs, Three Occupational Completion Points
Grade Level	30, 31
Facility Code	245
CTSO	SkillsUSA
Co-op Method	No
Apprenticeship	Yes

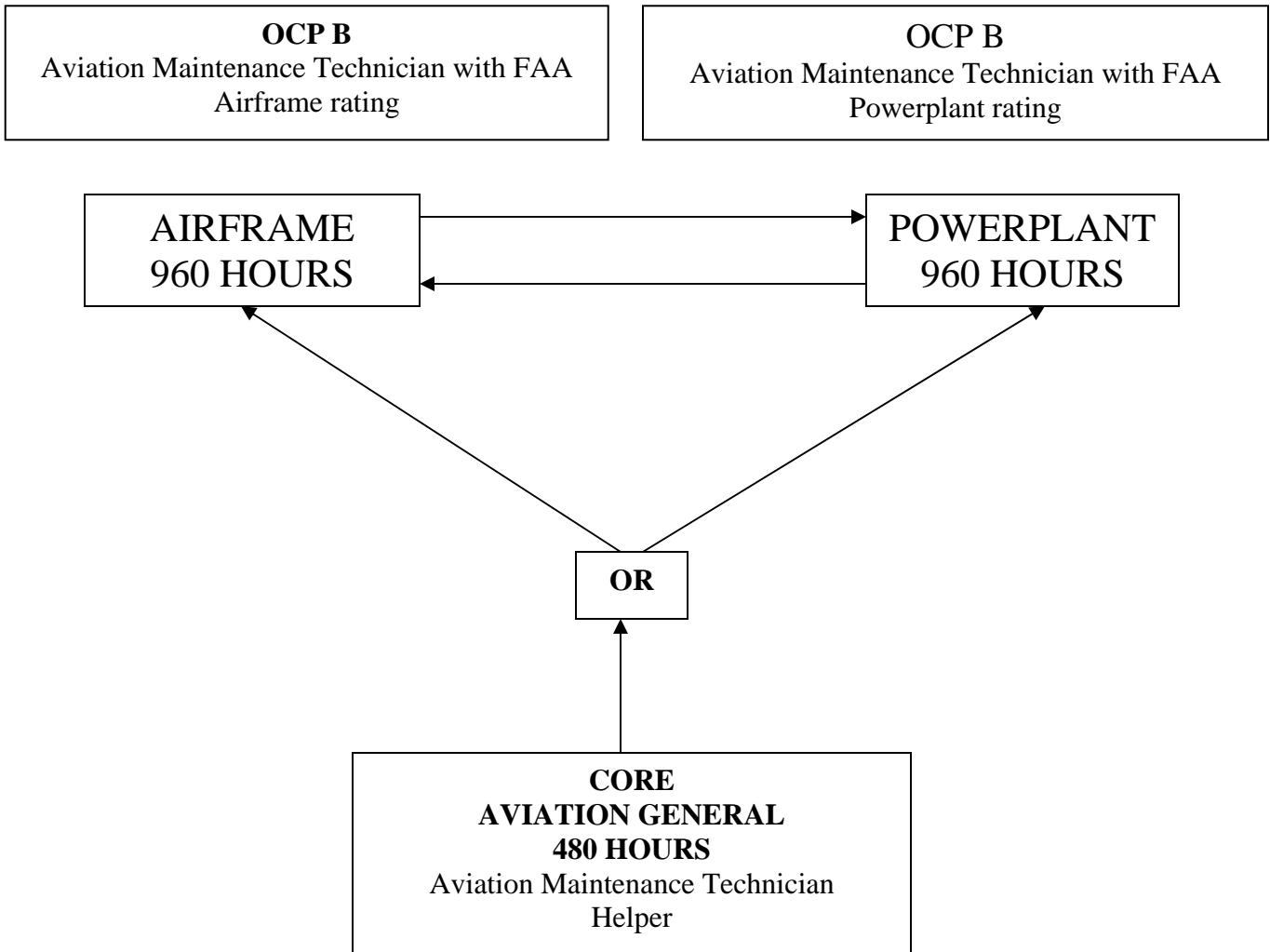
I. MAJOR CONCEPTS/CONTENT: The purpose of the programs in this cluster is to prepare students for employment or advanced training in the commercial and general aviation industry. Instruction is designed to prepare students for Federal Aviation Administration (FAA) license examinations for Airframe and Powerplant ratings. Federal Aviation Regulation (FAR) Part 147 identifies minimum requirements for AMT schools. Any changes to the FAA-approved course content must be approved in advance. The programs in this cluster prepare students for employment as an Aviation General Maintenance Technician Helper (Industry Title), an Aviation Maintenance Technician with FAA Airframe Rating (Industry Title), and an Aviation Maintenance Technician with FAA Powerplant Rating (Industry Title).

This program focuses on broad, transferable skills, stresses understanding of all aspects of the aviation maintenance industry, and demonstrates elements of the industry such as planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues, and health, safety, and environmental issues.

This program is a planned sequence of instruction consisting of two programs with one common core and three occupational completion points. With this sequence, a student may complete specified portions of the cluster for employment or continue to advance training. A student who fulfills the applicable competencies at any occupational completion point may terminate and still be considered occupation ready.

AVIATION MAINTENANCE TECHNOLOGY

THIS DIAGRAM REPRESENTS THE STRUCTURE OF THE AVIATION MAINTENANCE TECHNOLOGY PROGRAM



II. LABORATORY ACTIVITIES: Classroom, shop, and laboratory activities are an integral part of this program. FAR Section 147.21(e) requires teaching of at least 50 percent of the curriculum in the shop or laboratory. These activities include instruction in the use of safety procedures, tools, equipment, materials, and processes found in the industry. Equipment and supplies should be provided to enhance hands-on experiences for students in the chosen occupation.

TOOLS AND EQUIPMENT

All tools and equipment should be maintained in good working order and be in a condition for safe operation. The types of tools and equipment required for Aviation General, Airframe, and Powerplant teaching include the ones listed below:

Common hand tools, portable tools, precision tools, machine tools, torque tools, shop equipment and machinery, specialized tools and equipment, airframe structures, aircraft, airframes, powerplants, propellers, and components of this equipment.

FAA FAR Part 147 states: Each certified Aviation Maintenance Technician school shall provide facilities, equipment, and material equal to the standards currently required for the issue of the certificate and rating that it holds. Student standard and advanced tools list for Airframe and Powerplant course is as follows:

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| 1. Duckbill pliers, 7 3/4" long | 32. Double point scribe |
| 2. Diagonal cutting pliers, 6 1/3" long | 33. Phillips screwdriver No. 1, 6 1/4" long |
| 3. Needlenose Pliers, 6" long | 34. Standard screwdriver |
| 4. Slip joint pliers, 6" long | 35. Aviation snip set (straight, right, left cut) |
| 5. Adjustable joint pliers, 9 1/4" long | 36. Drill bit, 3/16" |
| 6. Vise grip pliers, 7" long | 37. Drill bit, 5/16" |
| 7. Center punch, 5" long | 38. Drill bit, 7/16" |
| 8. Pin punch (103A) 3/32" diameter | 39. Drill bit, 1/8" |
| 9. Pin punch (104A) 1/8" diameter | 40. Drill bit, 3/8" |
| 10. Pin punch (105A) 5/32" diameter | 41. Drill bit, 3/32" |
| 11. Pin punch (106A) 3/16" diameter | 42. Drill bit, 5/32" |
| 12. Pin punch (108A) 1/4" diameter | 43. Drill bit, 1/4" |
| 13. Chisel, 1/2" wide x 5 1/2" long | 44. #03 Twist drill |
| 14. Ball peen hammer, 8 oz. | 45. #21 Twist drill |
| 15. Plastic tip hammer, 16 oz. | 46. #22 Twist drill |
| 16. Hacksaw for 10-12" blades | 47. #27 Twist drill |
| 17. Hacksaw blades (1232) 2 ea, 24 tooth | 48. #29 Twist drill |
| 18. Hacksaw blades (1224) 2 ea, 32 tooth | 49. #30 Twist drill |
| 19. Flat file, 10" | 50. #31 Twist drill |
| 20. Half round file, 10" | 51. #40 Twist drill |
| 21. Round file, 10" | 52. #41 Twist drill |
| 22. Flat file, 6" | 53. #51 Twist drill |
| 23. 4" file set | 54. #11 Twist drill |

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| 24. Adjustable file handle | 55. Letter Q twist drill |
| 25. 6" dividers | 56. Letter I twist drill |
| 26. 6" rule | 57. Letter F twist drill |
| 27. 10' flexible steel tape, 3/4" blade | 58. Tool box w/tray |
| 28. Combination square | 59. Flashlight |
| 29. Safety goggles | 60. Inspection mirror |
| 30. 6" adjustable wrench | |
| 31. 10" adjustable wrench | |

ADVANCED TOOL KIT - DESCRIPTION OF CONTENTS

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|-------------------------------------|---|
| 1. Standard screwdriver, 4" | 26. 3/8" drive 12-pt socket, 3/4" |
| 2. Standard screwdriver, 6" | 27. 16 spring clips, 3/8" |
| 3. Standard screwdriver, 8" | 28. 1/2" drive spark plug socket, 7/8" |
| 4. #2 Phillips screwdriver, 4" | 29. 3/8" drive flex handle |
| 5. Combo wrench (x12) 3/8" | 30. 3/8" drive 6-p socket, 7/16" |
| 6. Combo wrench (x14) 7/16" | 31. 3/8" drive 12-pt socket, 13/16" |
| 7. Combo wrench (x16) 1/2" | 32. 3/8" drive 6-pt socket, 9/16" |
| 8. Combo wrench (x18) 9/16" | 33. 3/8" drive 6-pt socket, 7/8" |
| 9. Combo wrench (x20) 5/8" | 34. 3/8" to 1/4" adapter |
| 10. Combo wrench (x22) 11/16" | 35. 1/4" to 3/8" adapter |
| 11. Combo wrench (x24) 3/4" | 36. 3/8" to 1/2" adapter |
| 12. Combo wrench (x28) 7/8" | 37. Torx T-120 bit or screwdriver |
| 13. Combo wrench (x30) 15/16" | 38. 1/4" drive socket wrench set |
| 14. Combo wrench (x32) 1" | 39. 1/4" drive flex handle |
| 15. Combo wrench (x80) 1/4" | 40. Allen wrench set: .028", .035", 5/16", 3/64", 1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 3/16", 7/32", 1/4", 5/16", 3/8" |
| 16. Combo wrench (x100) 5/16" | 41. Feeler gauge, tapered leaf .0015-.025 |
| 17. Kit bag for combo wrenches | 42. Flexible magnetic pick-up tool |
| 18. Combo ignition wrench set | 43. Stripper for wire, size No. 14-22 |
| 19. 3/8" drive ratchet set w/ext. | 44. 1/4" drive long shank driver |
| 20. 3/8" drive 12-pt socket, 3/8" | 45. Plastic scribe |
| 21. 3/8" drive 12-pt socket, 7/16" | 46. 1/2" to 3/8" adapter |
| 22. 3/8" drive 12-pt socket, 1/2" | 47. Seal extractor set |
| 23. 3/8" drive 12-pt socket, 9/16" | |
| 24. 3/8" drive 12-pt socket, 5/8" | |
| 25. 3/8" drive 12-pt socket, 11/16" | |

III SPECIAL NOTE:

1. SkillsUSA, Inc. is the appropriate Career and Technical Student Organization (CTSO) for providing leadership training and for reinforcing specific career and technical skills. Career and Technical Student Organizations, when provided, shall be an integral part of

the career and technical instructional program, and the activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, FAC.

2. This program is offered in secondary and postsecondary adult vocational (PSAV) courses. Vocational credit shall be awarded to the student on a transcript in accordance with Section 1001.44 (3) (b) F.S. A student may elect to progress from one level to another without repeating the Aviation General courses. Aviation General is considered completed once all of the courses are passed. FAA license exams for ratings in an advanced program (Airframe or Powerplant) may be taken only after completion of both Aviation General and the advanced instruction. To become an Aviation Maintenance Technician with Airframe and Powerplant ratings, a student must complete both Airframe and Powerplant levels of instruction and pass the FAA written, oral, and practical exams.

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Adult students with disabilities must self-identify and request such services. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

3. Required FAA exams include GENERAL written, oral, and practical; AIRFRAME written, oral, and practical; and POWERPLANT written, oral, and practical. The only way a person can get authorization to take these examinations is to (1) graduate from an approved school or (2) obtain permission from the FAA to take the test based on prior experience on certified aircraft. Schools cannot grant permission (FAA FAR, Part 65 and Part 147, Subpart C 147.31).

4. Since an Aviation Maintenance Technician School (AMTS) is certified and inspected by the FAA, satisfaction of FAR Part 147 requirements should be the primary concern of an AMTS. When local and state educational requirements conflict with the FAA's regulation of an AMTS, those requirements must be resolved to satisfy FAR Part 147. In other words, FAA standards take precedence over other requirements. The FAA specifies minimum hours required and encourages schools to exceed minimum standards for the curriculum. The course content specified by the FAA may not be lowered.

5. "FAA FAR Part 147" identifies standards required by the FAA. Minimum teaching levels expected by the FAA also appear:

Level 1: knowledge of general principles

Level 2: knowledge of general principles and limited practical application

Level 3: knowledge of general principles with a high degree of practical application and hands-on skill levels according to FAA FAR Part 147:

6. For subjects taught at Level 3, all special tools required to meet "return to service" standards must be in satisfactory working condition, properly calibrated/tested, and of the

proper kind for the purpose for which they are intended. Tools should include an adequate supply of special tools appropriate to the ratings and curriculum. If students are required to provide hand tools, then the school should list the specific tools with the curriculum and provide a copy of this list to the students. Shop equipment and special tools should be maintained in good working order and be in a condition for safe operation.

7. Refer to FAA FAR Part 147 and industry publications for more information about required levels of proficiency, hours of instruction, and updates to occupational titles and training requirements. Keeping pace with the standards of industry and maintaining a high quality of training requires ongoing linkages with industry and FAA representatives.

8. Cooperative training - OJT is appropriate for this program. Whenever cooperative training - OJT is offered, the following are required for each student: a training plan, signed by the student, teacher, and employer, which includes instructional objectives and a list of on-the-job and in-school learning experiences; a workstation that reflects equipment, skills and tasks that are relevant to the occupation which the student has chosen as a career goal. The student must receive compensation for work performed.

9. In accordance with Rule 6A-10.040, FAC, the minimum basic-skills grade levels required for adult vocational students to complete this program are: Mathematics 10.0, Language 9.0, Reading 10.0. These grade-level numbers correspond to grade-equivalent scores obtained on one of the state-designated basic-skills examinations. If a student does not meet the basic-skills level required for completion of the program, remediation should be provided concurrently through Vocational Preparatory Instruction (VPI). Please refer to the Rule for exemptions.

10. **SCANS Competencies:** To accomplish the Secretary's Commission on Achieving Necessary Skills (SCANS) competencies, instructional strategies for this cluster must include methods that require students to identify, organize, and use resources appropriately; to work with each other cooperatively and productively; to acquire and use information; to understand social, organizational, and technological systems; and to work with a variety of tools and equipment. Instructional strategies must also incorporate methods of improving students' personal qualities and higher-order thinking skills. Community colleges initiating this program are strongly encouraged to visit existing Florida schools with two or four-year curriculums in this area.

IV. INSTRUCTOR QUALIFICATIONS

AVIATION MAINTENANCE MANAGEMENT BACKGROUND: Public Safety is affected by the proper maintenance of aircraft. Therefore, to ensure that rigid standards are followed in providing aircraft that are airworthy, the federal government in Federal Aviation Regulations sets the standards for the training, testing and licensing of aircraft maintenance technicians. The necessary inspections and documentation of inspections and repairs are specified by regulation.

Specialty Instructor Qualifications: All aviation maintenance technician instructors should be FAA certified in their area of specialization. If the school is to be certified by FAA, all aviation maintenance instructors must be certified in their respective area of specialization.

Academic Instructor Qualifications: A Masters Degree and experience in the subject area is preferred. A Bachelor Degree with eighteen hours of course work in the subject area is a minimum.

V. INTENDED OUTCOMES

Program Number	I470612
CIP Number	0647060700
Grade level	30, 31
Length	1,440 Hours
SOC	49-3011
Certification	AIR MECH @7G
Basic-Skills Grade Level	
Math	10
Language	9
Reading	10

INTENDED OUTCOMES: After successfully completing the appropriate content for each occupational completion point of this program, the student will be able to perform the following:

OCCUPATIONAL COMPLETION POINT - DATA CODE - A

AVIATION GENERAL MAINTENANCE TECHNICIAN HELPER--

- 01.0 Perform basic electricity skills.
- 02.0 Perform basic aircraft drawing skills.
- 03.0 Demonstrate aircraft weight and balance skills.
- 04.0 Maintain aircraft fluid lines and fittings.
- 05.0 Perform aircraft materials and processes skills.
- 06.0 Perform ground operations and servicing duties.
- 07.0 Perform cleaning and corrosion-control operations.
- 08.0 Demonstrate mathematical skills.
- 09.0 Maintain forms and records.
- 10.0 Apply basic physics to aircraft systems.
- 11.0 Demonstrate appropriate understanding of basic science.
- 12.0 Demonstrate the use of maintenance publications.
- 13.0 Interpret mechanic privileges and limitations.
- 14.0 Identify Federal Aviation Administration (FAA) licensing requirements.
- 15.0 Demonstrate appropriate communication skills.

- 16.0 Demonstrate workforce/workplace readiness skills as an aviation general maintenance technician helper.
- 17.0 Demonstrate an understanding of entrepreneurship related to opportunities in aviation general maintenance occupations.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B

AVIATION MAINTENANCE TECHNICIAN WITH FAA AIRFRAME
RATING--INDUSTRY TITLE (SOC 49-3011)

- 18.0 Maintain wood structures.
- 19.0 Perform aircraft covering.
- 20.0 Apply aircraft finishes.
- 21.0 Repair sheet-metal structures.
- 22.0 Perform welding.
- 23.0 Perform assembly and rigging.
- 24.0 Perform airframe inspection.
- 25.0 Maintain aircraft landing-gear systems.
- 26.0 Maintain hydraulic and pneumatic power systems.
- 27.0 Maintain cabin atmosphere control systems.
- 28.0 Maintain aircraft instrument systems.
- 29.0 Maintain communication and navigation systems.
- 30.0 Inspect and repair aircraft fuel systems.
- 31.0 Inspect and repair aircraft electrical systems.
- 32.0 Inspect and repair position and warning systems.
- 33.0 Maintain ice and rain control systems.
- 34.0 Inspect and repair aircraft fire-protection systems.
- 35.0 Demonstrate knowledge of Federal Aviation Administration Airframe licensing requirements.
- 36.0 Demonstrate employability skills as an aviation maintenance technician with a FAA airframe rating.
- 37.0 Demonstrate an understanding of entrepreneurship related to opportunities in aviation airframe maintenance occupations.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B

AVIATION MAINTENANCE TECHNICIAN WITH FAA POWERPLANT
RATING--INDUSTRY TITLE (SOC 49-3011)

- 38.0 Perform basic reciprocating engine skills.
- 39.0 Perform basic turbine engine skills.
- 40.0 Perform engine inspection.
- 41.0 Maintain engine instrument systems.
- 42.0 Maintain engine fire-protection systems.
- 43.0 Maintain engine electrical systems.
- 44.0 Maintain lubrication systems.
- 45.0 Maintain ignition systems.
- 46.0 Maintain fuel-metering systems.

- 47.0 Maintain engine fuel systems.
- 48.0 Maintain induction systems.
- 49.0 Maintain engine cooling systems.
- 50.0 Maintain engine exhaust and reverser systems.
- 51.0 Maintain aircraft propellers.
- 52.0 Demonstrate knowledge of FAA Powerplant licensing requirements.
- 53.0 Demonstrate employability skills for an aviation maintenance technician with a FAA powerplant rating.
- 54.0 Demonstrate an understanding of entrepreneurship opportunities in aviation powerplant maintenance occupations.

VI. STUDENT PERFORMANCE STANDARDS

OCCUPATIONAL COMPLETION POINT - DATA CODE - A

AVIATION GENERAL MAINTENANCE TECHNICIAN HELPER--

01.0 PERFORM BASIC ELECTRICITY SKILLS--The student will be able to:

- 01.01 Calculate and measure capacitance and inductance. [FAA FAR Part 147, Level 2]
- 01.02 Calculate and measure electrical power. [FAA FAR Part 147, Level 2]
- 01.03 Measure voltage, current, resistance, and continuity. [FAA FAR Part 147, Level 3]
- 01.04 Determine the relationship of voltage, current, and resistance in electrical circuits. [FAA FAR Part 147, Level 3]
- 01.05 Read and interpret aircraft electrical-circuit diagrams, including solid-state devices and logic functions. [FAA FAR Part 147, [Level 3]
- 01.06 Inspect and service batteries. [FAA FAR Part 147, Level 3]
- 01.07 Utilize proper electrical safety procedures.

02.0 PERFORM BASIC AIRCRAFT DRAWING SKILLS--The student will be able to:

- 02.01 Use aircraft drawings, symbols, and system schematics. [FAA FAR Part 147, Level 2]
- 02.02 Draw sketches of repairs and alterations. [FAA FAR Part 147, Level 3]
- 02.03 Use blueprint information. [FAA FAR Part 147, Level 3]
- 02.04 Use graphs and charts. [FAA FAR Part 147, Level 3]

03.0 DEMONSTRATE AIRCRAFT WEIGHT AND BALANCE SKILLS--The student will be able to:

- 03.01 Weigh aircraft.[FAA FAR Part 147, Level 2]
- 03.02 Perform complete weight-and-balance check and record data. [FAA FAR Part 147, Level 3]
- 03.03 Utilize proper personal safety procedures.

04.0 MAINTAIN AIRCRAFT FLUID LINES AND FITTINGS--The student will be able to:

- 04.01 Fabricate and install rigid and flexible fluid lines and fittings. [FAA FAR Part 147, Level 3]
- 04.02 Identify and utilize special fluid-line tools.
- 04.03 Utilize proper personal safety procedures for fluid lines and fittings.

05.0 PERFORM AIRCRAFT MATERIALS AND PROCESSES SKILLS--The student will be able to:

- 05.01 Identify and select appropriate nondestructive testing methods. [FAA FAR Part 147, Level 1]
- 05.02 Perform dye penetrant, eddy current, ultrasonic, and magnetic particle inspections. [FAA FAR Part 147, Level 2]
- 05.03 Perform basic heat-testing processes. [FAA FAR Part 147, Level 1]
- 05.04 Identify and select aircraft hardware and materials.[FAA FAR Part 147, Level 3]
- 05.05 Inspect and check welds. [FAA FAR Part 147, Level 3]
- 05.06 Perform precision measurements. [FAA FAR Part 147, Level 3]
- 05.07 Perform safety-wiring techniques.

06.0 PERFORM GROUND OPERATIONS AND SERVICING DUTIES--The student will be able to:

- 06.01 Start, ground operate, move, service, and secure aircraft and identify typical ground-operations hazards. [FAA FAR Part 147, Level 2]
- 06.02 Identify and select fuels. [FAA FAR Part 147, Level 2]
- 06.03 Comply with prescribed shop and personal safety procedures.

07.0 PERFORM CLEANING AND CORROSION-CONTROL OPERATIONS--The student will be able to:

- 07.01 Identify and select cleaning materials. [FAA FAR Part 147, Level 3].
- 07.02 Inspect, identify, remove, and treat aircraft corrosion and perform aircraft cleaning. [FAA FAR Part 147, Level 3]
- 07.03 Identify and utilize appropriate equipment for cleaning and corrosion control.
- 07.04 Observe appropriate personal safety procedures for corrosive chemicals.

08.0 DEMONSTRATE MATHEMATICAL SKILLS--The student will be able to:

- 08.01 Extract roots and raise numbers to a given power. [FAA FAR Part 147, Level 3]
- 08.02 Determine areas and volumes of various geometrical shapes by solving problems for volume, weight, area, circumference, and perimeter measurements for rectangles, squares, and cylinders.[FAA FAR Part 147, Level 3]
- 08.03 Solve ratio, proportion, and percentage problems. [FAA FAR Part 147, Level 3]
- 08.04 Perform algebraic operations involving addition, subtraction, multiplication, and division of positive and negative numbers. [FAA FAR Part 147, Level 3]
- 08.05 Measure tolerances on horizontal and vertical surfaces using millimeters, centimeters, feet, and inches.
- 08.06 Identify costs, prices, and taxes for the purchase and sale of materials that may be required when performing the duties of an Aviation Maintenance Technician.

09.0 MAINTAIN FORMS AND RECORDS--The student will be able to:

- 09.01 Write descriptions of work performed including aircraft discrepancies and corrective actions using typical aircraft maintenance records. [FAA FAR Part 147, Level 3]
- 09.02 Complete required maintenance forms, records, and inspection reports. [FAA FAR Part 147, Level 3]

10.0 APPLY BASIC PHYSICS TO AIRCRAFT SYSTEMS--The student will be able to:

- 10.01 Use and understand the principles of simple machines; sound, fluid, and heat dynamics; basic aerodynamics; aircraft structures; and theory of flight. [FAA FAR Part 147, Level 2]

11.0 DEMONSTRATE APPROPRIATE UNDERSTANDING OF BASIC SCIENCE--The student will be able to:

- 11.01 Understand molecular action as a result of temperature extremes, chemical reaction, and moisture content.
- 11.02 Draw conclusions or make inferences from data.
- 11.03 Identify health-related problems that may result from exposure to work-related chemicals and hazardous materials and know the proper precautions required for handling such materials.
- 11.04 Understand pressure measurement in terms of PSI, inches of mercury, and KPA.

12.0 DEMONSTRATE THE USE OF MAINTENANCE PUBLICATIONS--The student will be able to:

12.01 Demonstrate ability to read, comprehend, and apply information contained in FAA and manufacturers' aircraft maintenance specifications, data sheets, manuals, publications, and related Federal Aviation Regulations, Airworthiness Directives, and Advisory material. [FAA FAR Part 147, Level 3]

12.02 Read technical data. [FAA FAR Part 147, Level 3]

13.0 INTERPRET MECHANIC PRIVILEGES AND LIMITATIONS--The student will be able to:

13.01 Exercise mechanic privileges within the limitations prescribed by Part 65 of this chapter.[FAA FAR Part 147, Level 3]

14.0 IDENTIFY FEDERAL AVIATION ADMINISTRATION LICENSING REQUIREMENTS--The student will be able to:

14.01 Identify the information in Federal Aviation Regulations (FAR) Part 65 pertaining to eligibility for Aviation Maintenance Technician (AMT) certification and ratings.

14.02 Identify the FAA requirements that must be satisfied in order to display the FAA Airframe and Powerplant license.

15.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS--The student will be able to:

15.01 Write logical and understandable statements or phrases to accurately complete forms/invoices commonly used in business and industry.

15.02 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.

15.03 Read and follow written and oral instructions.

15.04 Answer and ask questions coherently and concisely.

15.05 Read critically by recognizing assumptions and implications and by evaluating ideas.

15.06 Demonstrate appropriate telephone/communication skills.

16.0 DEMONSTRATE WORKFORCE/WORKPLACE READINESS SKILLS AS AN AVIATION GENERAL MAINTENANCE TECHNICIAN HELPER--

-The student will be able to:

16.01 Identify reasons people work.

16.02 Describe connections between jobs, careers, family life, etc.

16.03 Conduct an individual inventory of personal work experience skills.

- 16.04 Develop a career plan.
- 16.05 Understand the information and ability required for different careers.
- 16.06 Compare occupation requirements and benefits associated with employment.
- 16.07 Locate, select, and process classified newspaper and magazine advertisements.
- 16.08 Identify and locate government and private employment agencies and/or computer-assisted job search programs.
- 16.09 Identify and locate personal resource materials (birth certificates, diplomas, training certificates, driver's license, and social security card).
- 16.10 Understand the importance of personal/professional job search information.
- 16.11 Develop a job card file (for specific job leads, requirements, employer names, interview information, and personal notes).
- 16.12 Use appropriate communication skills when using the telephone or email to talk with an employer.
- 16.13 Describe and give examples of job interview situations, including prepared questions to ask the job interviewer.
- 16.14 Identifies proper behavior/attitudes for job interviews.
- 16.15 Demonstrates skillful methods in job interviews (grooming, dress, and verbal/nonverbal communication techniques).
- 16.16 Develop a personal fact sheet that includes personal references, work history, educational information, and other related information.
- 16.17 Read, interpret, and complete a job application and attach a well composed resume' with cover letter.
- 16.18 Write a follow-up letter after the interview with appropriate comments.
- 16.19 Interpret wages, deductions, benefits, and taxes.
- 16.20 Interpret timekeeping forms, timecards, and timesheets, as applicable.
- 16.21 Interpret pay schedules and fringe benefits, medical insurance, and retirement plans.
- 16.22 Understand the importance of contracts and union agreements.
- 16.23 Show knowledge of employee handbooks, personnel policies, and workers compensation.
- 16.24 Identify safety signs found in places of employment and safe work procedures.
- 16.25 Understand the importance of reporting health and safety questions to the appropriate person.
- 16.26 Understand safe work clothes and good health rules/appropriate dress habits.
- 16.27 Understand relations to job training, performance, retention, promotion and changes by describing career job goals.
- 16.28 Identify feelings and opportunities that affect success for job advancement and retention.
- 16.29 Demonstrate the ability to apply or transfer skills learned in one job situation to another.
- 16.30 Identify computer skills that affect job retention and advancement.

- 16.31 Interpret and write work related correspondence (notes, memos, and letters).
- 16.32 Know how to react to constructive criticism and when to make personal changes or resign from a job.
- 16.33 Analyze and solve workforce problems.
- 16.34 Demonstrate appropriate use of the phone or cell phone in a workplace setting.
- 16.35 Demonstrate the ability to work with others and communication skills while addressing customers and clients.
- 16.36 Demonstrate the process of taking action to meet the needs and solve the problems of customers.
- 16.37 Demonstrate effective body language and its influence on the observer.
- 16.38 Identify sexual harassment issues in the workplace.
- 16.39 Identify and use different approaches when working within multicultural workforce groups.
- 16.40 Identify techniques for handling stress and time management problems on the job.
- 16.41 Understand the advantages and disadvantages of a computer, possible uses of a computer system, and proper procedures to maintain computer/network security.
- 16.42 Demonstrate knowledge of "Florida Right-To-Know Law" as recorded in Florida statues Chapter 442.

17.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP RELATED TO OPPORTUNITIES IN AVIATION GENERAL MAINTENANCE OCCUPATIONS--The student will be able to:

- 17.01 Define entrepreneurship.
- 17.02 Describe the importance of entrepreneurship to the United States economy.
- 17.03 List the advantages and disadvantages of business ownership.
- 17.04 Identify the risks involved in ownership of a business.
- 17.05 Identify the necessary personal characteristics of a successful entrepreneur.
- 17.06 Identify the business skills needed to operate a small business efficiently and effectively.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B
AVIATION MAINTENANCE TECHNICIAN WITH FAA AIRFRAME
RATING - INDUSTRY TITLE

18.0 MAINTAIN WOOD STRUCTURES--The student will be able to:

- 18.01 Service and repair wood structures. [FAA FAR Part 147, Level 1]
- 18.02 Identify wood defects. [FAA FAR Part 147, Level 1]
- 18.03 Inspect wood structures. [FAA FAR Part 147, Level 1]

19.0 PERFORM AIRCRAFT COVERING--The student will be able to:

- 19.01 Select and apply fabric and fiberglass covering materials. [FAA FAR Part 147, Level 1]
- 19.02 Inspect, test, and repair fabric and fiberglass. [FAA FAR Part 147, Level 1]

20.0 APPLY AIRCRAFT FINISHES--The student will be able to:

- 20.01 Apply trim, letters, and touch-up paint. [FAA FAR Part 147, Level 1]
- 20.02 Identify and select aircraft finishing materials. [FAA FAR Part 147, Level 2]
- 20.03 Apply finishing materials. [FAA FAR Part 147, Level 2]
- 20.04 Inspect finishes and identify defects. [FAA FAR Part 147, Level 2]

21.0 REPAIR SHEET-METAL STRUCTURES--The student will be able to:

- 21.01 Select, install, and remove special fasteners for metallic, bonded, and composite structures. [FAA FAR Part 147, Level 2]
- 21.02 Inspect bonded structures. [FAA FAR Part 147, Level 2]
- 21.03 Inspect, test, and repair fiberglass, plastics, honeycomb, composite, and laminated primary and secondary structures. [FAA FAR Part 147, Level 2]
- 21.04 Inspect, check, service, and repair windows, doors, and interior furnishings. [FAA FAR Part 147, Level 2]
- 21.05 Inspect and repair sheet-metal structures. [FAA FAR Part 147, Level 3]
- 21.06 Install conventional rivets. [FAA FAR Part 147, Level 3]
- 21.07 Form, lay out, and bend sheet metal. [FAA FAR Part 147, Level 3]
- 21.08 Identify and utilize appropriate metalworking tools and equipment.

22.0 PERFORM WELDING--The student will be able to:

- 22.01 Weld magnesium and titanium. [FAA FAR Part 147, Level 1]
- 22.02 Solder stainless steel. [FAA FAR Part 147, Level 1]
- 22.03 Fabricate tubular structures. [FAA FAR Part 147, Level 1]
- 22.04 Solder, braze, gas-weld, and arc-weld steel. [FAA FAR Part 147, Level 2]
- 22.05 Weld aluminum and stainless steel. [FAA FAR Part 147, Level 1]
- 22.06 Identify and utilize appropriate welding tools and equipment.

23.0 PERFORM ASSEMBLY AND RIGGING--The student will be able to:

- 23.01 Rig rotary-wing aircraft. [FAA FAR Part 147, Level 1]
- 23.02 Rig fixed-wing aircraft. [FAA FAR Part 147, Level 2]
- 23.03 Check alignment of structures. [FAA FAR Part 147, Level 2]

- 23.04 Assemble aircraft components, including flight control surfaces. [FAA FAR Part 147, Level 3]
- 23.05 Balance, rig, and inspect movable primary and secondary flight control structures. [FAA FAR Part 147, Level 3]
- 23.06 Jack aircraft. [FAA FAR Part 147, Level 3]
- 23.07 Identify and utilize appropriate rigging tools and equipment.

24.0 PERFORM AIRFRAME INSPECTION--The student will be able to:

- 24.01 Perform aircraft conformity and airworthiness inspections. [FAA FAR Part 147, Level 3]

25.0 MAINTAIN AIRCRAFT LANDING-GEAR SYSTEMS--The student will be able to:

- 25.01 Inspect, check, service, and repair landing gear, retraction systems, shock struts, brakes, wheels, tires, and steering systems. [FAA FAR Part 147, Level 3]

26.0 MAINTAIN HYDRAULIC AND PNEUMATIC POWER SYSTEMS--The student will be able to:

- 26.01 Repair hydraulic and pneumatic power system components. [FAA FAR Part 147, Level 2]
- 26.02 Identify and select hydraulic fluids. [FAA FAR Part 147, Level 3]
- 26.03 Inspect, check, service, troubleshoot, and repair hydraulic and pneumatic power systems. [FAA FAR Part 147, Level 3]
- 26.04 Identify and utilize appropriate hydraulic and pneumatic tools and equipment.

27.0 MAINTAIN CABIN ATMOSPHERE-CONTROL SYSTEMS--The student will be able to:

- 27.01 Inspect, check, troubleshoot, service, and repair heating, cooling, air-conditioning, pressurization systems, and air-cycle machines. [FAA FAR Part 147, Level 1]
- 27.02 Inspect, check, troubleshoot, service, and repair oxygen systems. [FAA FAR Part 147, Level 2]

28.0 MAINTAIN AIRCRAFT INSTRUMENT SYSTEMS--The student will be able to:

- 28.01 Inspect, check, service, troubleshoot, and repair electronic flight-instrument systems and both mechanical and electrical heading, speed, altitude, temperature, pressure, and position-indicating systems to include the use of built-in test equipment. [FAA FAR Part 147, Level 1]

28.02 Install instruments and perform a static pressure-system leak test. [FAA FAR Part 147, Level 2]

29.0 MAINTAIN COMMUNICATION AND NAVIGATION SYSTEMS--The student will be able to:

29.01 Inspect, check, and troubleshoot autopilot, servos, and approach coupling systems. [FAA FAR Part 147, Level 1]

29.02 Inspect, check, and service aircraft electronic communication and navigation systems, including VHF passenger address interphones and static-discharge devices, aircraft VOR, ILS, LORAN, radar beacon transponders, flight-management computers, and GPWS. [FAA FAR Part 147, Level 1]

29.03 Inspect and repair antenna and electronic equipment installations. [FAA FAR Part 147, Level 2]

29.04 Identify and utilize special electronic tools and equipment. [FAA FAR Part 147, Level 2]

30.0 INSPECT AND REPAIR AIRCRAFT FUEL SYSTEMS--The student will be able to:

30.01 Check and service fuel-dump systems. [FAA FAR Part 147, Level 1]

30.02 Perform fuel-management transfer, re-fueling, and de-fueling. [FAA FAR Part 147, Level 1]

30.03 Inspect, check, and repair pressure fuel systems.[FAA FAR Part 147, Level 1]

30.04 Repair aircraft fuel-system components. [FAA FAR Part 147, Level 2]

30.05 Inspect and repair fluid quantity-indicating systems. [FAA FAR Part 147, Level 2]

30.06 Troubleshoot, service, and repair fluid pressure and temperature warning systems. [FAA FAR Part 147, Level 2]

30.07 Inspect, check, service, troubleshoot, and repair aircraft fuel systems. [FAA FAR Part 147, Level 3]

31.0 INSPECT AND REPAIR AIRCRAFT ELECTRICAL SYSTEMS--The student will be able to:

31.01 Repair and inspect aircraft electrical system components; crimp and splice wiring to manufacturers' specifications; and repair pins and sockets of aircraft connectors. [FAA FAR Part 147, Level 2]

31.02 Install, check, and service airframe electric wiring, controls, switches, indicators, and protective devices. [FAA FAR Part 147, Level 3]

31.03 Inspect, check, troubleshoot, service, and repair alternating and direct current electrical systems. [FAA FAR Part 147, Level 3]

- 31.04 Inspect, check, and troubleshoot constant and integrated speed- drive generators. [FAA FAR Part 147, Level 1]
- 31.05 Identify and utilize appropriate electrical tools and equipment.

32.0 INSPECT AND REPAIR POSITION AND WARNING SYSTEMS--The student will be able to:

- 32.01 Inspect, check, and service speed and configuration warning systems, electrical brake controls, and antiskid systems.[FAA FAR Part 147, Level 2]
- 32.02 Inspect, check, troubleshoot, and service landing gear position- indicating and warning systems. [FAA FAR Part 147, Level 3]

33.0 MAINTAIN ICE AND RAIN CONTROL SYSTEMS--The student will be able to:

- 33.01 Inspect, check, troubleshoot, service, and repair airframe ice and rain control systems. [FAA FAR Part 147, Level 2]

34.0 INSPECT AND REPAIR AIRCRAFT FIRE-PROTECTION SYSTEMS--The student will be able to:

- 34.01 Inspect, check, and service smoke and carbon monoxide detection systems. [FAA FAR Part 147, Level 1]
- 34.02 Inspect, check, service, troubleshoot, and repair aircraft fire detection and extinguishing systems. [FAA FAR Part 147, Level 3]

35.0 DEMONSTRATE KNOWLEDGE OF FEDERAL AVIATION ADMINISTRATION AIRFRAME LICENSING REQUIREMENTS--The student will be able to:

- 35.01 Explain the requirements for obtaining FAA authorization to take the FAA Airframe examinations.

36.0 DEMONSTRATE EMPLOYABILITY SKILLS AS AN AVIATION MAINTENANCE TECHNICIAN (AMT) WITH AN FAA AIRFRAME RATING--The student will be able to:

- 36.01 Conduct a job search for an AMT with FAA airframe rating position.
- 36.02 Secure information about the requirements for an AMT with FAA airframe rating in a particular firm.
- 36.03 Identify documents that may be required when applying for an AMT with FAA airframe rating position.

37.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP RELATED OPPORTUNITIES IN AVIATION AIRFRAME MAINTENANCE OCCUPATIONS--The student will be able to:

- 37.01 Define entrepreneurship.
- 37.02 Describe the importance of entrepreneurship to aviation airframe maintenance occupations.
- 37.03 List the advantages and disadvantages of aviation airframe maintenance business ownership.
- 37.04 Identify the risks involved in ownership of an aviation airframe maintenance business.
- 37.05 Identify the necessary personal characteristics of a successful aviation airframe maintenance business owner.
- 37.06 Identify the business skills needed to operate an aviation airframe maintenance business efficiently and effectively.

**OCCUPATIONAL COMPLETION POINT - DATA CODE - B
AVIATION MAINTENANCE TECHNICIAN WITH FAA POWERPLANT
RATING - INDUSTRY TITLE**

38.0 PERFORM BASIC RECIPROCATING ENGINE SKILLS--The student will be able to:

- 38.01 Inspect and repair a radial engine. [FAA FAR Part 147, Level 1]
- 38.02 Overhaul a reciprocating engine. [FAA FAR Part 147, Level 2]
- 38.03 Inspect, check, service, and repair reciprocating engines and reciprocating. [FAA FAR Part 147, Level 3]
- 38.04 Install, troubleshoot, and remove reciprocating engines. [FAA FAR Part 147, Level 3]

39.0 PERFORM BASIC TURBINE ENGINE SKILLS--The student will be able to:

- 39.01 Overhaul a turbine engine. [FAA FAR Part 147, Level 2]
- 39.02 Inspect, check, service, and repair turbine engines and turbine engine installations. [FAA FAR Part 147, Level 3]
- 39.03 Install, troubleshoot, and remove turbine engines. [FAA FAR Part 147, Level 3]
- 39.04 Inspect and troubleshoot unducted fan systems and components. [FAA FAR Part 147, Level 1]
- 39.05 Inspect, check, service, and troubleshoot turbine-driven auxiliary power units. [FAA FAR Part 147, Level 1]

40.0 PERFORM ENGINE INSPECTION--The student will be able to:

- 40.01 Perform powerplant conformity and airworthiness inspections. [FAA FAR Part 147, Level 3]

41.0 **MAINTAIN ENGINE INSTRUMENT SYSTEMS**--The student will be able to:

- 41.01 Troubleshoot, service, and repair electrical and mechanical fluid rate-of-flow indicating systems. [FAA FAR Part 147, Level 2]
- 41.02 Inspect, check, service, troubleshoot, and repair electrical and mechanical engine temperature-, pressure-, and rpm-indicating systems. [FAA FAR Part 147, Level 3]

42.0 **MAINTAIN ENGINE FIRE-PROTECTION SYSTEMS**--The student will be able to:

- 42.01 Inspect, check, service, troubleshoot, and repair engine fire-detection and extinguishing systems. [FAA FAR Part 147, Level 3]

43.0 **MAINTAIN ENGINE ELECTRICAL SYSTEMS**--The student will be able to:

- 43.01 Repair engine electrical system components. [FAA FAR Part 147, Level 2]
- 43.02 Install, check, and service engine electrical wiring, controls, switches, indicators, and protective devices. [FAA FAR Part 147, Level 3]

44.0 **MAINTAIN LUBRICATION SYSTEMS**--The student will be able to:

- 44.01 Identify and select lubricants. [FAA FAR Part 147, Level 2]
- 44.02 Repair engine lubrication system components. [FAA FAR Part 147, Level 2]
- 44.03 Inspect, check, service, troubleshoot, and repair engine lubrication systems. [FAA FAR Part 147, Level 3]

45.0 **MAINTAIN IGNITION SYSTEMS**--The student will be able to:

- 45.01 Overhaul magneto and ignition harness. [FAA FAR Part 147, Level 2]
- 45.02 Inspect, service, troubleshoot, and repair reciprocating and turbine engine ignition systems and components. [FAA FAR Part 147, Level 2]
- 45.03 Inspect, service, troubleshoot, and repair turbine engine electrical starting systems. [FAA FAR Part 147, Level 3]
- 45.04 Inspect, service, and troubleshoot turbine engine pneumatic starting systems. [FAA FAR Part 147, Level 1]

46.0 **MAINTAIN-FUEL METERING SYSTEMS**--The student will be able to:

- 46.01 Troubleshoot and adjust turbine engine fuel-metering systems and electronic-engine fuel controls. [FAA FAR Part 147, Level 1]
- 46.02 Overhaul carburetor. [FAA FAR Part 147, Level 2]

- 46.03 Repair engine fuel-metering system components. [FAA FAR Part 147, Level 2]
- 46.04 Inspect, check, service, troubleshoot, and repair reciprocating and turbine engine fuel-metering systems. [FAA FAR Part 147, Level 3]

47.0 MAINTAIN ENGINE FUEL SYSTEMS--The student will be able to:

- 47.01 Repair engine fuel system components. [FAA FAR Part 147, Level 2]
- 47.02 Inspect, check, service, troubleshoot, and repair engine fuel systems. [FAA FAR Part 147, Level 3]

48.0 MAINTAIN INDUCTION SYSTEMS--The student will be able to:

- 48.01 Inspect, check, troubleshoot, service, and repair engine ice and rain control systems. [FAA FAR Part 147, Level 2]
- 48.02 Inspect, check, service, troubleshoot, and repair heat exchangers, superchargers, and turbine engine airflow and temperature control systems. [FAA FAR Part 147, Level 1]
- 48.03 Inspect, check, service, and repair carburetor air intake and induction manifolds. [FAA FAR Part 147, Level 3]

49.0 MAINTAIN ENGINE COOLING SYSTEMS--The student will be able to:

- 49.01 Repair engine cooling system components. [FAA FAR Part 147, Level 2]
- 49.02 Inspect, check, troubleshoot, service, and repair engine cooling systems. [FAA FAR Part 147, Level 3]

50.0 MAINTAIN ENGINE EXHAUST AND REVERSER SYSTEMS--The student will be able to:

- 50.01 Repair engine exhaust system components. [FAA FAR Part 147, Level 2]
- 50.02 Inspect, check, troubleshoot, service, and repair engine exhaust systems. [FAA FAR Part 147, Level 3]
- 50.03 Troubleshoot and repair engine thrust reverser systems and related components. [FAA FAR Part 147, Level 1]

51.0 MAINTAIN AIRCRAFT PROPELLERS--The student will be able to:

- 51.01 Inspect, check, service, and repair propeller synchronizing and ice control systems. [FAA FAR Part 147, Level 1]
- 51.02 Identify and select propeller lubricants. [FAA FAR Part 147, Level 2]
- 51.03 Balance propellers. [FAA FAR Part 147, Level 1]

- 51.04 Repair propeller control system components. [FAA FAR Part 147, Level 2]
- 51.05 Inspect, check, service, and repair fixed-pitch, constant-speed, feathering propellers, and propeller-governing systems. [FAA FAR Part 147, Level 3]
- 51.06 Install, troubleshoot, and remove propellers. FAA FAR Part 147, Level 3]
- 51.07 Repair aluminum alloy propeller blades. [FAA FAR Part 147, Level 3]

52.0 DEMONSTRATE KNOWLEDGE OF FEDERAL AVIATION ADMINISTRATION POWERPLANT LICENSING REQUIREMENTS--

The student will be able to:

- 52.01 Explain the requirements for obtaining FAA authorization to take the FAA Powerplant examinations.

53.0 DEMONSTRATE EMPLOYABILITY SKILLS FOR AN AVIATION MAINTENANCE TECHNICIAN (AMT) WITH AN FAA POWERPLANT RATING--The student will be able to:

- 53.01 Conduct a job search for an AMT position.
- 53.02 Secure information about the requirements for an AMT in a particular firm.
- 53.03 Identify documents that may be required when applying for an AMT position.

54.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP RELATED TO OPPORTUNITIES IN AVIATION POWERPLANT MAINTENANCE OCCUPATIONS--The student will be able to:

- 54.01 Define entrepreneurship.
- 54.02 Describe the importance of entrepreneurship to the aviation maintenance industry.
- 54.03 List the advantages and disadvantages of aviation maintenance business ownership.
- 54.04 Identify the risks involved in ownership of an aviation maintenance business.
- 54.05 Identify the necessary personal characteristics of a successful aviation maintenance business owner.
- 54.06 Identify the business skills needed to operate an aviation maintenance business efficiently and effectively.

WEBSITE AND DISTANCE LEARNING INFORMATION

AVIATION MAINTENANCE MANAGEMENT. The purpose of this section is to provide a sample of the currently available distance learning products, which can be used to enhance the Aviation Maintenance Management program. It is not intended to recommend any specific vendor or online program.

Web Sites

www.faa.gov
www.corp-visions.com/mgtcourses.html
www.adt.com
www.amtech.com
www.flightsafetyonline.com
www.sverdrup.com
<http://aviation.hntb.com/>
<http://todaysmilitary.com>
http://www.careersinthemilitary.com/index.cfm?fuseaction=search.detail&mc_id=67
www.cam.org/~icao
www.airportnet.org
www.aci-na.org
www.air-transport.org
www.raa.org
[Airnav](#)
[American Society for Testing Materials](#)
[Boeing Company](#)
[Bureau of Transportation Statistics](#)
[Department of Transportation](#)
[Econet](#)
[Environmental Protection Agency](#)
www.iatac.com/html/home.html

Institutions with related Distance Learning programs

*Embry Riddle Aeronautical Univ: <http://www.db.erau.edu>
*Florida Community College at Jacksonville: <http://www.fccj.org/>
*Miami-Dade Community College: <http://www.mdc.edu>
*Florida Institute of Technology: <http://www.fit.edu>
*Utah Valley State College: <http://www.uvsc.edu/disted/>
Aerolearn: <http://www.aerolearn.com/>
<http://www.airportnet.org/depts/regulatory/arff/airfam/>
* = These programs are offered at a cost.