Course Outline

Transportation **REVISED: January/2023**

Job Title
Aircraft Mechanics & Service Technicians

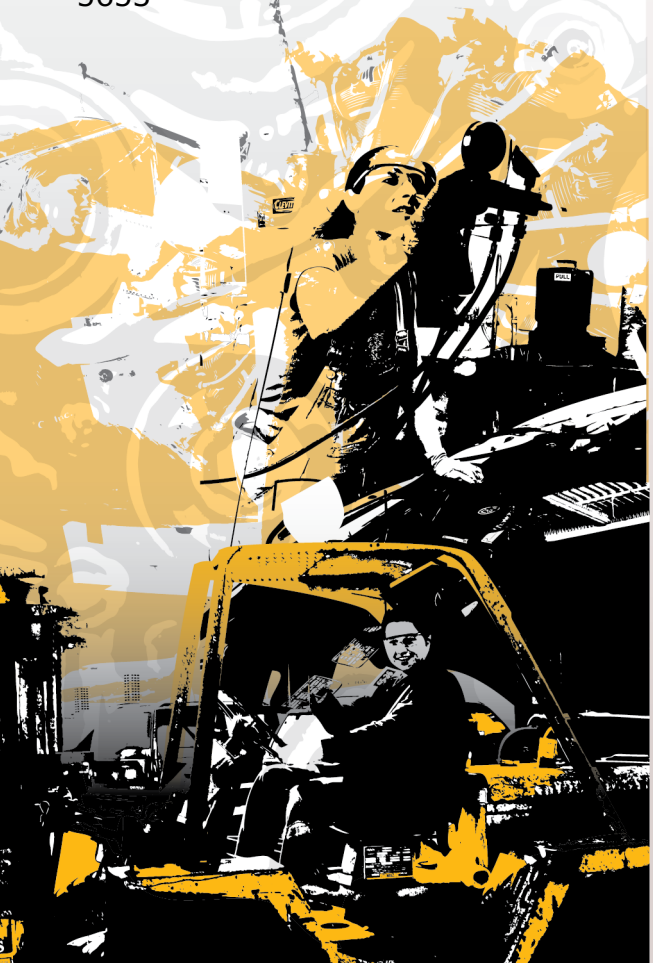
Career Pathway:
Systems Diagnostics, Service, & Repair

Industry Sector:
Transportation

O*NET-SOC CODE:
49-3011.00

CBEDS Title:
Aircraft Mechanics

CBEDS No.:
5653



79-70-56

Aviation Mechanic General II - Maintenance

Credits: 20 **Hours:** 292.5

Course Description:
This competency-based course includes instruction in general subjects related to aviation maintenance including orientation and safety, aircraft materials, hardware and processes, inspection concepts and techniques, cleaning and corrosion control, fluid lines and fittings, regulations, maintenance forms, records, and publications, human factors, and ground operations and servicing. It prepares students to pass parts of the Federal Aviation Administration (FAA) airframe and powerplant mechanic examinations. The competencies in this course are aligned with the FAA Title 14 CFR Part 147 Airman Certification Standards requirements, California High School Academic Content Standards, and the California Career Technical Education Model Curriculum Standards.

Prerequisites:
Enrollment requires a minimum 9.0 reading level as measured by the CASAS GOALS test and a minimum 9.0 math level as measured by the CASAS GOALS test and the minimum age of 16.

NOTE: For Perkins purposes this course has been designated as an **introductory** course.

This course **cannot** be repeated once a student receives a Certificate of Completion.

Los Angeles Unified School District
Division of Adult and Career Education
Instructional and Couseling Services Unit
Adult Curriculum Office
www.wearedace.org

COURSE OUTLINE COMPETENCY-BASED COMPONENTS

A course outline reflects the essential intent and content of the course described. Acceptable course outlines have six components. (Education Code Section 52506). Course outlines for all apportionment classes, including those in jails, state hospitals, and convalescent hospitals, contain the six required elements:

(EC 52504; 5CCR 10508 [b]; Adult Education Handbook for California [1977], Section 100)

COURSE OUTLINE COMPONENTS	**LOCATION**
GOALS AND PURPOSES	Cover

The educational goals or purposes of every course are clearly stated, and the class periods are devoted to instruction. The course should be broad enough in scope and should have sufficient educational worth to justify the expenditure of public funds.

The goals and purpose of a course are stated in the COURSE DESCRIPTION. Course descriptions state the major emphasis and content of a course and are written to be understandable by a prospective student.

PERFORMANCE OBJECTIVES OR COMPETENCIES	pp. 7-12

Objectives should be delineated and described in terms of measurable results for the student and include the possible ways in which the objectives contribute to the student's acquisition of skills and competencies.

Performance Objectives are sequentially listed in the COMPETENCY-BASED COMPONENTS section of the course outline. Competency Areas are units of instruction based on related competencies. Competency Statements are competency area goals that together define the framework and purpose of a course. Competencies fall on a continuum between goals and performance objectives and denote the outcome of instruction.

Competency-based instruction tells a student before instruction what skills or knowledge they will demonstrate after instruction. Competency-based education provides instruction which enables each student to attain individual goals as measured against pre-stated standards.

Competency-based instruction provides immediate and continual repetition. In competency-based education the curriculum, instruction, and assessment share common characteristics based on clearly stated competencies. Curriculum, instruction, and assessment in competency-based education are explicit, known, agreed upon, integrated, performance oriented, and adaptive.

COURSE OUTLINE COMPETENCY-BASED COMPONENTS (continued)

COURSE OUTLINE COMPONENTS	LOCATION
INSTRUCTIONAL STRATEGIES	p. 14
Instructional techniques or methods could include laboratory techniques, lecture method, small-group discussion, grouping plans, and other strategies used in the classroom. Instructional strategies for this course are listed in the TEACHING STRATEGIES AND EVALUATION section of the course outline. Instructional strategies and activities for a course should be selected so that the overall teaching approach takes into account the instructional standards of a particular program, i.e., English as a Second Language, Programs for Adults with Disabilities.	
UNITS OF STUDY, WITH APPROXIMATE HOURS ALLOTTED FOR EACH UNIT	Cover
The approximate time devoted to each instructional unit within the course, as well as the total hours for the course, is indicated. The time in class is consistent with the needs of the student, and the length of the class should be that it ensures the student will learn at an optimum level. Units of study, with approximate hours allotted for each unit are listed in the COMPETENCY AREA STATEMENT(S) of the course outline. The total hours of the course, including work-based learning hours (community classroom and cooperative vocational education) is listed on the cover of every CBE course outline. Each Competency Area listed within a CBE outline is assigned hours of instruction per unit.	pp. 7-12
EVALUATION PROCEDURES	p. 14
The evaluation describes measurable evaluation criteria clearly within the reach of the student. The evaluation indicates anticipated improvement in performances as well as anticipated skills and competencies to be achieved. Evaluation procedures are detailed in the TEACHING STRATEGIES AND EVALUATION section of the course outline. Instructors monitor students' progress on a continuing basis, assessing students on attainment of objectives identified in the course outline through a variety of formal and informal tests (applied performance procedures, observations, and simulations), paper and pencil exams, and standardized tests.	
REPETITION POLICY THAT PREVENTS PERPETUATION OF STUDENT ENROLLMENT	Cover
After a student has completed all the objectives of the course, he or she should not be allowed to reenroll in the course. There is, therefore, a need for a statement about the conditions for possible repetition of a course to prevent perpetuation of students in a particular program for an indefinite period of time.	

ACKNOWLEDGMENTS

Thanks to ROBERT GIBSON and DANIEL D. PERKINS for developing and editing this curriculum. Acknowledgment is also given to ERICA ROSARIO for designing the original artwork for the course covers.

ANA MARTINEZ
Specialist
Career Technical Education

MATTHEW OBERLANDER
Coordinator
Adult Education Instruction

ROSARIO GALVAN
Administrator
Division of Adult and Career Education

APPROVED:

ROWENA LAGROSA
Interim Executive Director
Division of Adult and Career Education

CALIFORNIA CAREER TECHNICAL EDUCATION MODEL CURRICULUM STANDARDS
Transportation Industry Sector
Knowledge and Performance Anchor Standards

1.0 Academics
Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment. Refer to the Transportation academic alignment matrix for identification of standards.

2.0 Communications
Acquire and accurately use Transportation sector terminology and protocols at the career and college readiness level for communicating effectively in oral, written, and multimedia formats.

3.0 Career Planning and Management
Integrate multiple sources of career information from diverse formats to make informed career decisions, solve problems, and manage personal career plans.

4.0 Technology
Use existing and emerging technology to investigate, research, and produce products and services, including new information, as required in the Transportation sector workplace environment.

5.0 Problem Solving and Critical Thinking
Conduct short, as well as more sustained, research to create alternative solutions to answer a question or solve a problem unique to the Transportation sector using critical and creative thinking, logical reasoning, analysis, inquiry, and problem-solving techniques.

6.0 Health and Safety
Demonstrate health and safety procedures, regulations, and personal health practices and determine the meaning of symbols, key terms, and domain-specific words and phrases as related to the Transportation sector workplace environment.

7.0 Responsibility and Flexibility
Initiate, and participate in, a range of collaborations demonstrating behaviors that reflect personal and professional responsibility, flexibility, and respect in the Transportation sector workplace environment and community settings.

8.0 Ethics and Legal Responsibilities
Practice professional, ethical, and legal behavior, responding thoughtfully to diverse perspectives and resolving contradictions when possible, consistent with applicable laws, regulations, and organizational norms.

9.0 Leadership and Teamwork
Work with peers to promote divergent and creative perspectives, effective leadership, group dynamics, team and individual decision making, benefits of workforce diversity, and conflict resolution as practiced in the SkillsUSA career technical student organization

10.0 Technical Knowledge and Skills
Apply essential technical knowledge and skills common to all pathways in the Transportation sector, following procedures when carrying out experiments or performing technical tasks.

11.0 Demonstration and Application
Demonstrate and apply the knowledge and skills contained in the Transportation anchor standards, pathway standards, and performance indicators in classroom, laboratory, and workplace settings, and through the SkillsUSA career technical student organization.

C. Systems Diagnostics and Service Pathway
The Systems Diagnostics and Service pathway prepares students for postsecondary education and employment in the transportation industry, which includes but is not limited to motor vehicles, rail systems, marine applications, and small-engine and specialty equipment.

Sample occupations associated with this pathway:

- Service Technician/Maintenance Worker/Shop Foreman
- Technical Writer
- Dispatcher
- Engineer
- Investigator/Inspector

C1.0 Demonstrate the practice of personal and occupational safety and protecting the environment by using materials and processes in accordance with manufacturer and industry standards.

C2.0 Practice the safe and appropriate use of tools, equipment, and work processes.

C3.0 Use scientific principles in relation to chemical, mechanical, and physical functions for various engine and vehicle systems.

C4.0 Perform and document maintenance procedures in accordance with the recommendations of the manufacturer.

C5.0 Apply and understand appropriate business practices.

C6.0 Demonstrate the application, operation, maintenance, and diagnosis of engines, including but not limited to two- and four-stroke and supporting subsystems.

C7.0 Demonstrate the function, principles, and operation of electrical and electronic systems using manufacturer and industry standards.

C8.0 Demonstrate the function and principles of automotive drivetrain, steering and suspension, brake, and tire and wheel components and systems in accordance with national industry standards.

CBE
Competency-Based Education

COMPETENCY-BASED COMPONENTS
for the Aviation Mechanic: General II - Maintenance Course

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
A. ORIENTATION AND SAFETY Understand, apply, and evaluate classroom and workplace policies and procedures. (2 hours)	1. Describe the scope and purpose of the course. 2. Describe the FAA requirements for attendance. 3. Describe the federal certification requirements. 4. Describe and explain classroom policies, grading, and procedures. 5. Describe the different occupations in the Transportation Industry Sector which have an impact on the role of aviation mechanics. 6. Describe the opportunities available for promoting gender equity and the representation of non-traditional populations. 7. Explain and recognize the importance of teamwork, respecting individual and cultural differences and diversity in the workplace. 8. Explain the impact of Environmental Protection Agency (EPA) legislation on Transportation Industry Sector practices in protecting and preserving the environment. 9. Interpret OSHA-10 policies, procedures, and regulations for the workplace environment. 10. Describe and demonstrate the procedures for contacting proper authorities for the removal of hazardous materials based on the EPA standards. 11. Describe the California Occupational Safety and Health Administration (Cal/OSHA) and its electrical safety standards governing aviation mechanics. 12. Describe the Safety Data Sheet (SDS) as it applies to the aviation industry. 13. Identify classroom and workplace first aid and emergency procedures based on the American Red Cross (ARC) standards. 14. Describe school safety regulations. 15. Describe the safe use of shop equipment and storage areas. 16. Pass the safety test with 100% accuracy.	**Career Ready Practice:** 1, 3, 9, 10 **CTE Anchor:** Academics: 1.0 Career Planning and Management: 3.4, 3.6, 3.9 Health and Safety: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7 Leadership and Teamwork: 9.6 Technical Knowledge and Skills: 10.2 Demonstration and Application: 11.1 **CTE Pathway:** C1.2, C1.3, C1.4, C2.2, C4.2, C5.1, C5.2
B. AIRCRAFT MATERIALS, HARDWARE, AND PROCESSES Demonstrate and understand the knowledge, risk management, and skill elements required for aircraft materials, hardware, and processes.	1. The student demonstrates understanding and terminology of: a. materials and hardware commonly used in aircraft and their general purpose and application b. heat treatment conditions, alloy identification, and metal working processes applicable to the suitability and compatibility to forces acting upon aircraft materials c. torquing tools, principles, and procedures and effect on fastener preload condition d. safety wire and clip requirements and safety techniques e. precision measurement tools, principles, and techniques	**Career Ready Practice:** 1, 5, 6, 10, 11 **CTE Anchor:** Academics: 1.0 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(Refer to FAA-ACS Subject E) (63 hours)	f. solder, and weld procedures and identification of acceptable versus unacceptable characteristics 2. The student demonstrates the ability to identify, assess, and mitigate risk associated with: a. use of personal protective equipment (PPE) b. roper versus improper torquing techniques and effect on critical and/or highly stressed fasteners c. use hardware or Suspected Unapproved Parts (SUPS) 3. The student demonstrates the ability to: a. identify, select, install, and torque aircraft hardware with proper safety methods b. inspect and check welds c. make precision measurements using Vernier scales and check for calibration and concentricity d. identify and fabricate control cable component assemblies using switch and swaged-end fittings e. select and determine suitability of aluminum alloys for aircraft structural repair f. identify rivets by physical characteristics and distinguish between heat–treated and non-heat-treated aluminum alloys	Health and Safety: 6.2, 6.3, 6.4, 6.6 Technical Knowledge and Skills: 10.1, 10.2 Demonstration and Application: 11.1 **CTE Pathway:** C1.4, C2.1, C2.2, C2.3, C2.4, C2.5, C2.6, C2.7
C. INSPECTION CONCEPTS AND TECHNIQUES Demonstrate and understand the knowledge, risk management, and skill elements required for aircraft inspection concepts and techniques. (Refer to FAA-ACS Subject K) (65 hours)	1. The student demonstrates understanding and terminology of: a. inspection methods, use of precision measuring tools to include calibration and tool accuracy requirements b. Non-destructive Testing (NDT) procedures and methods c. aircraft inspection programs 2. The student demonstrates the ability to identify, assess, and mitigate risk associated with: a. demagnetizing a component following a magnetic particle inspection b. the use and calibration of precision measuring tools and equipment according to appropriate inspection techniques c. damage prevention to aircraft components and test equipment when using an ohmmeter 3. The student demonstrates the ability to: a. take accurate measurements using various precision measurement tools b. perform visual and dye penetrant inspections c. inspect aircraft for compliance with an Airworthiness Directive (AD) d. identify Non-destructive Testing (NDT) methods for composite, metal surface, and subsurface metal defects and perform a tap test on a composite component	**Career Ready Practice:** 1, 5, 10, 11 **CTE Anchor:** Academics: 1.0 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 Technical Knowledge and Skills: 10.1, 10.2 Demonstration and Application: 11.1 **CTE Pathway:** C1.4, C2.1, C2.2, C2.3, C2.4, C2.5, C2.7, C4.3

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
D. CLEANING AND CORROSION CONTROL Demonstrate and understand the knowledge, risk management, and skill elements required for cleaning and corrosion control. (Refer to FAA-ACS Subject G) (32.5 hours)	1. The student demonstrates understanding and terminology of: a. corrosion theory, causation, types and effects on corrosion-prone areas with corresponding cleaning, treatment, removal, and prevention methods used in aircraft corrosion identification and inspection procedures b. proper versus improper surface preparation, conversion coatings, and protective treatments for airframe structures to be applied with primer and top-coat finishing materials c. effect of ambient temperature and humidity conditions on finishing material application and techniques d. regulatory requirements for replacing identification, registration markings, and placards e. health and safety practices and precautions when using aircraft finishing materials f. inspection of aircraft finishes and consideration for effect on control surface balancing 2. The student demonstrates the ability to identify, assess, and mitigate risk associated with: a. health and safety concerns when using paints, solvents, and finishing materials and subsequent storage application and disposal practices and procedures b. identification of materials and processes to be used for the application of corrosion treatment and finishing materials on a given part or structure to prevent further damage 3. The student demonstrates the ability to: a. identify, select, apply cleaning and corrosion treatment, and prevention materials and solutions using proper procedures for a given prepared surface b. inspect for corrosion and paint defects in aircraft compartments c. determine size and location requirements for aircraft registration numbers, layout, and mask a metal or composite surface in preparation for paint application d. determine what paint system may be used on a given aircraft and prepare metal and composite surfaces for painting	**Career Ready Practice:** 1, 5, 10, 11 **CTE Anchor:** Academics: 1.0 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 Health and Safety: 6.2, 6.3, 6.4, 6.6 Technical Knowledge and Skills: 10.1, 10.2 Demonstration and Application: 11.1 **CTE Pathway:** C1.1, C1.2, C1.4, C2.1, C4.2, C4.3, C4.4
E. FLUID LINES AND FITTINGS Demonstrate and understand the knowledge, risk management, and skill elements required for fluid lines and fittings.	1. The student demonstrates understanding and terminology of: a. rigid and flexible line materials, applications, sizes, and identification b. rigid and flexible line fabrication, installation, and inspection techniques and practices c. proper torquing and securing of aircraft fluid lines 2. The student demonstrates the ability to identify, assess, and mitigate risk associated with: a. system configuration prior to and during maintenance to include mitigation of unsecured or twisted fluid lines and loosened fittings b. hazardous fluids and high-pressure systems	**Career Ready Practice:** 1, 5, ~~6,~~ 10, 11 **CTE Anchor:** Academics: 1.0 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 Health and Safety: 6.2, 6.3

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(Refer to FAA-ACS Subject D) (32.5 hours)	c. use of tools while applying torque to a fluid line 3. The student demonstrates the ability to: a. fabricate and install rigid and flexible fluid lines with appropriate fluid line fittings b. identify fluid lines and perform inspections for proper installation and security	Technical Knowledge and Skills: 10.1, 10.2 Demonstration and Application: 11.1 **CTE Pathway:** C1.2, C2.2, C2.3, C4.3
F. REGULATIONS, MAINTENANCE FORMS, RECORDS, AND PUBLICATIONS Demonstrate and understand the knowledge, risk management, and skill elements required for regulations, maintenance forms, records, and publications.	1. The student demonstrates understanding and terminology of: a. privileges, limitations, and recent experience requirements of a mechanics certificate b. maintenance record entries for approval or disapproval for return to service after performing maintenance, repairs, alterations, and inspections c. purpose of FAA forms, aircraft maintenance terminology, criteria and responsibility for determining types of repairs or alterations within the regulatory framework of 14 CFR d. agency and manufacturer maintenance and guidance publications, online resources and approved or acceptable data used to determine conformity requirements in performing maintenance and inspection procedures e. airworthiness limitations, alerts, cautions, and warnings indications used in maintenance and operating manuals f. inoperative equipment, discrepancy records or placards, and serial number effectivity codes used in parts manuals g. mechanic address change notification procedures 2. The student demonstrates the ability to identify, assess, and mitigate risk associated with: a. completeness and accuracy of documentation and avoidance of complacency in maintenance record keeping b. use of safety data sheets c. adherence to warnings, cautions, or notes contained in aircraft manuals used in determining component applicability in a given aircraft 3. The student demonstrates the ability to: a. determine applicability of approved or acceptable data in assessing a major repair or alteration and accurately complete a corresponding FAA form 337 for a given repair b. determine applicability and/or compliance status with an Airworthiness Directive (AD) in completing maintenance record entries for return to service of a given aircraft after performing a 100 hour inspection c. compare an equipment list for an aircraft to equipment installs and use manufacturer parts catalogs to locate and determine approved replacement parts for installation on a given aircraft	**Career Ready Practice:** 1, 2, 5, 10, 11 **CTE Anchor:** Academics: 1.0 Communications: 2.4, 2.5, 2.6 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 Health and Safety: 6.1 Technical Knowledge and Skills: 10.1, 10.2 Demonstration and Application: 11.1 **CTE Pathway:** C4.1, C4.2, C4.3, C4.4

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(Refer to FAA-ACS Subject I) (58.5 hours)	d. check Technical Standard Order (TSO) or Parts Manufacture Authorization (PMA) for proper markings e. locate Supplemental Type Certificate (STC) applicable for a specific aircraft f. determine the conformity or aircraft instrument range markings and placarding	
G. HUMAN FACTORS Demonstrate and understand the knowledge, risk management, and skill elements required for human factors. (Refer to FAA-ACS Subject L) (6.5 hours)	1. The student demonstrates understanding and terminology of: a. safety culture and organizational factors, types of human errors, principles, and performance limitations b. physical and social environment, communication, and reporting hazards c. teamwork, leadership, professionalism, and integrity d. shift and task turnover, conditions/preconditions for unsafe acts e. events investigation 2. The student demonstrates the ability to identify, assess, and mitigate risk associated with: a. selective reporting of hazards b. fatigue management and fitness for duty c. non-invasive, condition-monitoring technologies 3. The student demonstrates the ability to: a. file a Malfunction or Defect Report b. brief a shift turnover for continuity of work c. locate information regarding human factors errors	**Career Ready Practice:** 1, 2, 5, 6, 7, 8, 9, 10, 11 **CTE Anchor:** Academics: 1.0 Communications: 2.1, 2.3, 2.4 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 Responsibility and Flexibility: 7.7 Ethics and Legal Responsibilities: 8.1, 8.2, 8.3, 8.4, 8.5, Leadership and Teamwork: 9.1, 9.7 Technical Knowledge and Skills: 10.1, 10.2 Demonstration and Application: 11.1 **CTE Pathway:** C1.5, C2.6, C4.3, C5.4
H. GROUND OPERATIONS AND SERVICING Demonstrate and understand the knowledge, risk management, and skill elements required for ground operations and servicing.	1. The student demonstrates understanding and terminology of: a. aircraft towing and securing procedures b. proper aircraft fueling/defueling procedures with an understanding of fuel identification, characteristics, additives, and appropriate fuel grades c. engine starting, ground operation and taxiing procedures with an understanding of appropriate airport operations,	**Career Ready Practice:** 1, 2, 5, 10, 11 **CTE Anchor:** Academics: 1.0

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(Refer to FAA-ACS Subject F) (32.5 hours)	communications, and runway incursion prevention procedures d. hazardous materials handling and proper use of SDS and PPE e. tool and hardware use and accountability and preventing Foreign Object Damage (FOD) f. types and classes of fire extinguishers and proper use procedures g. aircraft system servicing including oil, hydraulic, pneumatic, deicing fluid, and oxygen system servicing procedures 2. The student demonstrates the ability to identify, assess, and mitigate risk associated with: a. prepare to tow an aircraft b. fueling, defueling, misfueling, contamination, and proper grounding procedures c. oxygen system servicing d. connect external power equipment, start utilizing proper checklist procedures and ground operate an aircraft e. engine operation with cowling removed while troubleshooting utilizing manufacturer's instructions f. ground operation of aircraft in the vicinity of other aircraft or ground support equipment 3. The student demonstrates the ability to: a. perform aircraft ground handling procedures to include FOD control, towing, connecting to external power, and utilize appropriate hand marshalling signals b. inspect an aircraft fuel system for water, foreign objects debris, approved fuel grade and prepare aircraft for viewing c. follow a checklist to start up or shut down an aircraft engine and identify procedures for extinguishing fires in an engine induction system d. secure an aircraft and locate and explain procedures for stowing various types of aircraft after engine shutdown	Communications: 2.3, 2.4, 2.5, 2.6 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 Health and Safety: 6.1, 6.3 Technical Knowledge and Skills: 10.1, 10.2 Demonstration and Application: 11.1 **CTE Pathway:** C1.2, C1.4, C2.2, C2.3, C2.5, C2.6, C4.3, C5.2, C8.1

SUGGESTED INSTRUCTIONAL MATERIALS and OTHER RESOURCES

TEXTBOOKS

Jeppesen Sanderson Inc., A & P Technician General Textbook, 5th Edition, Jeppesen Sanderson Publishing, 2016

Jeppesen Sanderson Inc., General Test Guide with Oral and Practical Study Guide, 8th Edition, Jeppesen Sanderson Publishing, 2017

Federal Aviation Administration., Aircraft Inspection, Repair & Alterations: Acceptable Methods, Techniques & Practices, 8th Edition, Aircraft Technical Book Company, 2009

Federal Aviation Administration (FAA)/Aviation Supplies & Academics (ASA), Federal Aviation Regulations for Aviation Maintenance Technicians, 2022 Edition, Aviation Supplies & Academics, 2021

Optional Handbooks and Reference Material

Federal Aviation Administration, Airframe & Powerplant Mechanics, General Handbook, 5th Edition, Aircraft Technical Book, 2018

Crane, Dale and Michmerhuizen, Aviation Mechanic Handbook, 7th Edition, Aviation Supplies & Academics, 2017

RESOURCES

Employer Advisory Board members

California Career Technical Education Model Curriculum Standards
https://www.cde.ca.gov/ci/ct/sf/documents/transportation.pdf

COMPETENCY CHECKLIST

TEACHING STRATEGIES and EVALUATION

METHODS AND PROCEDURES

A. Lecture and discussion

B. Multimedia presentations

C. Visual aids

D. Projects

E. Individualized instruction

EVALUATION

SECTION A – Orientation & Safety – Pass the safety test with 100% accuracy.

SECTION B – Aircraft Materials, Hardware, and Processes – Pass all assignments and exams with a minimum score of 80% or higher.

SECTION C – Inspection Concepts and Techniques – Pass all assignments and exams with a minimum score of 80% or higher.

SECTION D – Cleaning and Corrosion Control – Pass all assignments and exams with a minimum score of 80% or higher.

SECTION E – Fluid Lines and Fittings – Pass all assignments and exams with a minimum score of 80% or higher.

SECTION F – Regulations, Maintenance Forms, Records, and Publications – Pass all assignments and exams with a minimum score of 80% or higher.

SECTION G – Human Factors – Pass all assignments and exams with a minimum score of 80% or higher.

SECTION H – Ground Operations and Servicing – Pass all assignments and exams with a minimum score of 80% or higher.

Standards for Career Ready Practice

1. **Apply appropriate technical skills and academic knowledge.**
   Career-ready individuals readily access and use the knowledge and skills acquired through experience and education. They make connections between abstract concepts with real-world applications and recognize the value of academic preparation for solving problems, communicating with others, calculating measures, and performing other work-related practices.

2. **Communicate clearly, effectively, and with reason.**
   Career-ready individuals communicate thoughts, ideas, and action plans with clarity, using written, verbal, electronic, and/or visual methods. They are skilled at interacting with others: they are active listeners who speak clearly and with purpose, and they are comfortable with terminology that is common to workplace environments. Career-ready individuals consider the audience for their communication and prepare accordingly to ensure the desired outcome.

3. **Develop an education and career plan aligned with personal goals.**
   Career-ready individuals take personal ownership of their educational and career goals and manage their individual plan to attain these goals. They recognize the value of each step in the educational and experiential process, and they understand that nearly all career paths require ongoing education and experience to adapt to practices, procedures, and expectations of an ever-changing work environment. They seek counselors, mentors, and other experts to assist in the planning and execution of education and career plans.

4. **Apply technology to enhance productivity.**
   Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring and using new technology. They understand the inherent risks—personal and organizational—of technology applications, and they take actions to prevent or mitigate these risks.

5. **Utilize critical thinking to make sense of problems and persevere in solving them**
   Career-ready individuals recognize problems in the workplace, understand the nature of the problems, and devise effective plans to solve the problems. They thoughtfully investigate the root cause of a problem prior to introducing solutions. They carefully consider options to solve a problem and, once agreed upon, follow through to ensure the problem is resolved.

6. **Practice personal health and understand financial literacy.**
   Career-ready individuals understand the relationship between personal health and workplace performance. They contribute to their personal well-being through a healthy diet, regular exercise, and mental health activities. Career-ready individuals also understand that financial literacy leads to a secure future that enables career success.

7. **Act as a responsible citizen in the workplace and the community.**
   Career-ready individuals understand the obligations and responsibilities of being a member of a community and demonstrate this understanding every day through their interactions with others. They are aware of the impacts of their decisions on others and the environment around them, and they think about the short-term and long-term consequences of their actions. They are reliable and consistent in going beyond minimum expectations and in participating in activities that serve the greater good.

8. **Model integrity, ethical leadership, and effective management.**
Career-ready individuals consistently act in ways that align with personal and community-held ideals and principles. They employ ethical behaviors and actions that positively influence others. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the direction and actions of a team or organization, and they recognize the short-term and long-term effects that management's actions and attitudes can have on productivity, morale, and organizational culture.

9. **Work productively in teams while integrating cultural and global competence.**
Career-ready individuals contribute positively to every team, as both team leaders and team members. To avoid barriers to productive and positive interaction, they apply an awareness of cultural differences. They interact effectively and sensitively with all members of the team and find ways to increase the engagement and contribution of other members.

10. **Demonstrate creativity and innovation.**
Career-ready individuals recommend ideas that solve problems in new and different ways and contribute to the improvement of the organization. They consider unconventional ideas and suggestions by others as solutions to issues, tasks, or problems. They discern which ideas and suggestions may have the greatest value. They seek new methods, practices, and ideas from a variety of sources and apply those ideas to their own workplace practices.

11. **Employ valid and reliable research strategies.**
Career-ready individuals employ research practices to plan and carry out investigations, create solutions, and keep abreast of the most current findings related to workplace environments and practices. They use a reliable research process to search for new information and confirm the validity of sources when considering the use and adoption of external information or practices.

12. **Understand the environmental, societal, and economic impacts of decisions.**
Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact other people, organizations, the workplace, and the environment. They are aware of and utilize new technologies, understandings, procedures, and materials and adhere to regulations affecting the nature of their work. They are cognizant of impacts on the social condition, environment, workplace, and profitability of the organization.

Statement for Civil Rights

All educational and vocational opportunities are offered without regard to race, color, national origin, gender, or physical disability.