

Implementation Date
Fall 2008

PROGRAM CONCENTRATION: Architecture, Construction,
Communications & Transportation
CAREER PATHWAY: Aircraft Support
COURSE TITLE: Aviation Maintenance II

Aviation Maintenance II is the third course of a four-year term of study. Students continue to build and expand their solid knowledge base in the basics of aircraft maintenance, performance, and design. Classroom and laboratory activities assure a thorough understanding of the aviation environment.

ACT-AMII-1. Students will demonstrate the ability to perform the following weight and balance problems:

- a. Weigh equipment preparation and setup according to manufacturer's instructions.
- b. Locate procedures for leveling and the leveling points for an aircraft.
- c. Locate weigh points and procedures for determining CG and determine the weigh point arms for an aircraft.
- d. Identify tare items for a specific aircraft and weighing procedure.
- e. Find the datum for at least two different aircraft.
- f. Determine the weight and location of required ballast after an actual or hypothetical equipment change.

ACADEMIC STANDARDS:

MM1G1. Students will investigate properties of geometric figures in the coordinate plane.

MM1A1. Students will explore and interpret the characteristics of functions, using graphs, tables, and simple algebraic techniques.

ACT-AMII-2. Students will demonstrate knowledge in drawings and blueprints and will be able to perform the following:

- a. Perform maintenance and/or inspection using drawings/blueprints and/or system schematics.
- b. Troubleshoot using drawings/blueprints and/or schematics.
- c. Use a control cable tension chart.
- d. Use a servicing, limitation, or calculation chart or graph.
- e. Draw a sketch of an alteration or repair.
- f. Draw a diagram of an electrical circuit or other system, or portion thereof, and explain the drawing.

ACADEMIC STANDARDS:

MM1G1. Students will investigate properties of geometric figures in the coordinate plane.

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SPS10. Students will investigate the properties of electricity and magnetism.

ACT-AMII-3. Students will demonstrate knowledge in aerodynamics and is able to perform the following:

- a. Weigh equipment preparation and setup according to manufacturer's instructions.
- b. Locate procedures for leveling and the leveling points for an aircraft.
- c. Locate weight points and procedures for determining CG and determine the weight point arms for an aircraft.
- d. Identify tare items for a specific aircraft and weighing procedure.
- e. Find the datum for at least two different aircraft.
- f. Determine the weight and location of required ballast after an (actual or hypothetical) equipment change.

ACADEMIC STANDARDS:

MM1G1. Students will investigate properties of geometric figures in the coordinate plane.

MM1A1. Students will explore and interpret the characteristics of functions, using graphs, tables, and simple algebraic techniques.

ACT-AMII-4. Students will demonstrate knowledge in materials and processes and will be able to perform the following:

- a. Select and install standard aircraft hardware, to include one or more self-locking nuts.
- b. Select, install, and secure a clevis bolt and associated hardware.
- c. Select and install one or more appropriate screws/bolts, nuts, cotter pins and washers.
- d. Inspect hardware for defects and proper installation.
- e. Safety a turnbuckle.
- f. Identify rivets by physical characteristics.

ACT-AMII-6. Students will demonstrate the ability to do the following for aircraft ground operation and servicing:

- a. Start, ground operate, move, service and secure aircraft.
- b. Identify typical ground operation hazards.

ACT-AMII-7. Students will demonstrate the ability to perform the following for basic aircraft electrical systems.

- a. Inspect a battery and installed battery system.
- b. Accomplish a battery state-of-charge (hydrometer) and/or electrical leak (cell imbalance) test.

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- c. Accomplish removal and/or installation of a battery in an aircraft.
- d. Set-up and connect a charger to one or more batteries for constant current and/or constant voltage charging.

ACADEMIC STANDARDS:

SPS10. Students will investigate the properties of electricity and magnetism.

CTAE Foundation Skills

The Foundation Skills for Career, Technical and Agricultural Education (CTAE) are critical competencies that students pursuing any career pathway should exhibit to be successful. As core standards for all career pathways in all program concentrations, these skills link career, technical and agricultural education to the state's academic performance standards.

The CTAE Foundation Skills are aligned to the foundation of the U. S. Department of Education's 16 Career Clusters. Endorsed by the National Career Technical Education Foundation (NCTEF) and the National Association of State Directors of Career Technical Education Consortium (NASDCTEC), the foundation skills were developed from an analysis of all pathways in the sixteen occupational areas. These standards were identified and validated by a national advisory group of employers, secondary and postsecondary educators, labor associations, and other stakeholders. The Knowledge and Skills provide learners a broad foundation for managing lifelong learning and career transitions in a rapidly changing economy.

CTAE-FS-1 Technical Skills: Learners achieve technical content skills necessary to pursue the full range of careers for all pathways in the program concentration.

CTAE-FS-2 Academic Foundations: Learners achieve state academic standards at or above grade level.

CTAE-FS-3 Communications: Learners use various communication skills in expressing and interpreting information.

CTAE-FS-4 Problem Solving and Critical Thinking: Learners define and solve problems, and use problem-solving and improvement methods and tools.

CTAE-FS-5 Information Technology Applications: Learners use multiple information technology devices to access, organize, process, transmit, and communicate information.

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CTAE-FS-6 Systems: Learners understand a variety of organizational structures and functions.

CTAE-FS-7 Safety, Health and Environment: Learners employ safety, health and environmental management systems in corporations and comprehend their importance to organizational performance and regulatory compliance.

CTAE-FS-8 Leadership and Teamwork: Learners apply leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.

CTAE-FS-9 Ethics and Legal Responsibilities: Learners commit to work ethics, behavior, and legal responsibilities in the workplace.

CTAE-FS-10 Career Development: Learners plan and manage academic-career plans and employment relations.

CTAE-FS-11 Entrepreneurship: Learners demonstrate understanding of concepts, processes, and behaviors associated with successful entrepreneurial performance.