An Overview of the Aviation Maintenance Curriculum
About

Choose Aerospace is a partnership of aerospace stakeholders, joined together to address one of the biggest threats to continued industry growth: the availability of a diverse, qualified technical workforce.

The charitable organization is managed by the Aviation Technician Education Council, a non-profit trade association that represents aviation technical education, including nearly 75% of all FAA-certificated aviation maintenance technician schools in the U.S.
Leadership

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Director
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National Transportation Safety Board (former board member)
Oklahoma Department of Career and Technical Education
Pathways to Aviation
Piedmont Airlines
Portland Community College
Professional Aviation Maintenance Association
ROTORDOC LLC
The forecasted demand for maintenance technicians continues its multi-year climb despite pandemic impacts.

Boeing’s 2022-2041 Pilot Technician Outlook projects that the North American market will need 134,000 new technicians to support fleet operators and providers of maintenance, repair, and overhaul services.

Forecasted demand for commercial aviation technicians in North America has eclipsed pre-pandemic levels by 10%.

“The combination of fleet growth, attrition, and replacement will continue to drive high demand for the foreseeable future.”
Aviation Maintenance Curriculum

- Developed by Clemson University Center for Workforce Development and ARCS Aviation, with guidance from Choose Aerospace leadership, ATEC, and advisory committee.

- Approximately 500 hours of content

- Covers the general subject areas in the FAA Mechanic Airman Certification Standards (same as required by part 147)

- Intended for deployment in community-based programs and high schools to create awareness in aviation careers, and to provide matriculation opportunities into A&P schools

- Limited equipment, materials, and teacher qualifications required, supplemental hands-on elements available

- License fees $200 per student, per year
Hands-On Elements

• Optional labs are deployable in a tabletop environment
• Recommended tool and equipment list available
• Enhanced opportunities available for high schools that have part 147 partners
Credentialing

• Choose Aerospace is engaging with the FAA to provide students that complete the curriculum the opportunity to take the FAA general written knowledge test. More to come...
• In the meantime, an industry-recognized credential will:
  • provide an often-necessary credential for high school technical programs
  • encourage matriculation agreements into secondary education
  • provide third-party validation of knowledge for employers
Matriculation

- Students that come away with the ATEC credential have demonstrated knowledge of the general subject areas in the FAA mechanic airman certification standards
- FAA certificated programs transfer in credit for previous instruction
- Choose Aerospace students receive credit for the general subject areas, go right into airframe and powerplant
Curriculum Overview

Nov 18, 2022

Rachel Turner
Curriculum Coordinator
Lead Instructional Designer

CUCWD
FAA General Courses

Welcome to
WEIGHT AND BALANCE CONTROL
This course will help you learn the importance of weight and balance, the understanding of which is critical to the safety of the aircraft and cargo onboard and to the aircraft itself. You will also learn what to look for when examining weight and balance records. In addition, you will learn how to calculate center of gravity, aircraft weight, and load balance. All of this knowledge is necessary for the technician’s ability to apply the theory of weight and balance of aircraft in the real world and be successful in their future career as aviation maintenance technician.

Welcome to
FLUID LINES AND FITTINGS
This course will help you identify the common materials, applications, preparation, installation, and repair of fluid and flexible fluid lines used in the various pressurized fluid systems in an aircraft. Learners will learn about the proper material and fitting selection as well as proper preparation methods for fabrication and repair of fluid lines. Furthermore, learners will also gain an understanding of the various aspects of proper rigid and flexible hose assembly installation. This knowledge is necessary for the technician’s ability to properly inspect, maintain, and repair of an airplane’s various fluid lines to ensure reliable operation of the various fluid systems during flight.

Welcome to
HAND TOOLS AND MEASURING DEVICES
This course will help you understand the various tools and measuring devices used daily by AMTs during routine and special maintenance tasks. You will learn about the tool, how it should be used, and what situations the tool is designed for. You will also gain a basic understanding of the care and maintenance of each tool. In addition, you will learn the different measurement and marking tools for performing fabrication, maintenance, and installation procedures accurately to prevent collateral damage on materials and equipment.

Welcome to
MATHEMATICS
The Mathematics course reviews basic mathematics concepts such as whole numbers, ratios, and percentages which maintenance technician routinely use in their work. Students will also review understanding of algebra, geometry, and trigonometry, the basics of which technicians need to properly maintain an aircraft.
FAA Course Updates

- Adjusted list to 12 Courses
- Currently revising the Fundamental of Electricity Course and splitting it into two courses:
  - AC Electricity
  - DC Electricity
FAA Course Updates

- Adjusted list to 12 Courses
- Currently revising the Fundamental of Electricity Course and splitting it into two courses:
  - AC Electricity
  - DC Electricity
- Revised the Mathematics and Physics courses.
  - Aligned objectives with ACS
- Added new material to EW platform and revised the lecture slides.
- Recorded new video lectures

Course Objectives

**Knowledge**: Students demonstrate an understanding of:
- Areas of various geometrical shapes.
- Volumes of various geometrical shapes.
- Definitions, descriptions and use of geometrical terms, including but not limited to any of the following: polygon, pi, diameter, radius, and hypotenuse.
- Ratio problems, including examples of where or how they may be used in relation to aircraft maintenance or system(s) operation.
- Proportion and percentage problems, including examples of where or how they may be used in relation to aircraft maintenance or system(s) operation.
- Algebraic operations, including examples of where or how they may be used in relation to aircraft maintenance.
- Conditions or areas in which metric conversion may be necessary.
- Scientific (exponential) notation, decimal notation, fractional notation, binary notation, and conversion between these various forms of numeric notation.
- Rounding numbers.
- Powers and special powers.
- Measurement systems.
- Use of positive and negative integers in mathematical operations.
- Basic mathematic functions (addition, subtraction, multiplication, division).

**Risk Management**: Students demonstrate the ability to identify, assess, and mitigate risks associated with:
- Precedence of operations when solving an algebraic equation.
- Use of both positive and negative integers in mathematical operations.
- Rounding off calculations.

**Skills**: The applicant demonstrates the ability to:
- Determine the square root of given numbers.
- Compute the volume of a cylinder.
- Compute the area of a wing.
- Calculate the volume of a shape, such as a baggage compartment or fuel tank.
- Convert between fractional and decimal numbers.
- Compare two numerical values using ratios.
- Compute compression ratio.
- Compute the torque value when converting from inch pounds to foot pounds or from foot pounds to inch pounds.
Video Lecture and Annotations

If a number has a negative power, it is equal to the reciprocal of the number with the same power made positive.

Always put parentheses around a negative number before raising it to a power when using a calculator.
Interactive Lessons and Activities

**Tube Cutting**

The free end lengths of tubing work should be cut about 10% longer than that calculated to allow for any slight variations in manufacture.

Cutting is carried out using a fine-toothed (32 Teeth Per Inch, TPI) hacksaw or a tube cutter machine (a roller cutter similar to that used by plumbers, which is attached to the tube and rotated so that it’s cutting wheel cuts through the tube). The cutter can be used with any soft metal tubing such as copper, aluminium or aluminium alloy.

Locate the point where the cut is to be made and place the cutting wheel over that point of the tube. As excessive pressure may damage the tubing, apply slight pressure on the cutting wheel and rotate it around the tubing.

The activity given below consists of the procedural steps to be followed for tube cutting. Follow the step-by-step instructions to cut the tube.

Select the appropriate tool for proceeding with copper tube cutting.
Storyline Interactives

Welcome to Determine Density Altitude

Let's Begin
About Choose Aerospace

The Choose Aerospace aviation maintenance curriculum puts students on a pathway to FAA mechanic certification. The curriculum is intended for use in a high school setting but deployable in current part 147 schools and community-based workforce development programs.

With this hybrid approach to learning, it combines traditional delivery methods (classroom, textbooks, and in-person exercises) using a nationally deployable e-learning platform. It is intended to be used in the classroom, but many of the elements can be taught online, or student-paced. Minimal equipment and materials are required.

In partnership with Clemson University Center for Workforce Development (CUMWD), ATEC Aviation, the Aviation Technical Education Council (ATEC), labor organizations, industry employers, and education partners, the Choose Aerospace curriculum builds pipeline programs directly into aviation education and aviation careers.

Through ATEC’s network of Federal Aviation Administration (FAA)-accredited aviation maintenance schools, students that take the course/are still have the opportunity to transfer their credit to technical schools across the U.S., given the demand for qualified aviation technicians, direct-to-employment opportunities are also available.

Welcome

What’s inside?

01 Getting Started: Instructor Dashboard Overview

02 Suggested Course Sequence and ACS Standards Alignment

03 Overview of each course, module, and lesson

04 Course, module, and lesson objectives

05 Lesson plans, hands-on projects, and lesson activities

06 Student and instructor handouts for extended learning
Instructor Dashboard

The online instructor dashboard provides instructors with a suite of tools to view learner progress, view and review materials, and manage course content. Below is a description of the features and an overview of how this information will appear in the instructor dashboard for your course.

Course Info

A convenient way to view student enrollment count and basic course information.

Instructor Dashboard

Course Info

Course Info

Enrollment Information

Number of learners: 10
Number of completed learners: 1
Number of active learners: 10
Number of inactive learners: 0
Number of current learners: 10
Number of past learners: 0
Number of future learners: 0
Number of active students: 1
Number of inactive students: 0
Number of current students: 1
Number of past students: 0
Number of future students: 0

Resources

Download the course guide, lesson plans, student and teacher handouts, answer keys, and other instructional resources.

Resources

Handouts

This area contains additional resources for the course. The links below are downloadable PDFs for instructor use.

Instructor Materials

- Handout - Course Guide
- Handout - Student Activities
- Handout - Instructor Notes
- Handout - Student Handouts
- Handout - Module 1 - Unit 1 - Unit 2 - Unit 3
- Handout - Module 2 - Unit 1 - Unit 2 - Unit 3
- Handout - Module 3 - Unit 1 - Unit 2 - Unit 3
- Handout - Module 4 - Unit 1 - Unit 2 - Unit 3
- Handout - Final Exam Questions

Instructor Notes

- Handout - Course Overview
- Handout - Student Guide
- Handout - Instructor Manual
- Handout - Student Handbook
- Handout - Module 1 - Unit 1 - Unit 2 - Unit 3
- Handout - Module 2 - Unit 1 - Unit 2 - Unit 3
- Handout - Module 3 - Unit 1 - Unit 2 - Unit 3
- Handout - Module 4 - Unit 1 - Unit 2 - Unit 3
# Course Pacing Guide

## MODULE 1: SHOP AND FLIGHT LINE SAFETY

<table>
<thead>
<tr>
<th>Days</th>
<th>Lesson</th>
<th>Lesson Objectives</th>
<th>ACS Codes</th>
<th>Materials/Resources</th>
</tr>
</thead>
</table>
| DAYS 1-4   | Lesson 1: Shop Safety | Lesson 1 Objectives | APL-F1K102, APL-F1K117, APL-F1K144, APL-F1K158, APL-F1K166, APL-F1E240 | - Video lecture: Lesson 1 Shop Safety
- Materials: Colored markers, colored pencils, poster drawing paper, poster paper and alphabet (for each group), sticky notes
- Teacher Handouts: Shop Introduction Activity
- Safety Sign Activity
- Risk Distance Activity
- Student Handouts: Lab Safety Packet Activity
- Video Resources: Wing Safety: https://www.youtube.com/watch?v=...
- PW: https://www.youtube.com/watch?v=...
- PDR: https://www.youtube.com/watch?v=...
- Hazard Diamond Song: https://www.youtube.com/watch?v=... |
| DAY 5      | Lesson 2: Fire Protection | Lesson 2 Objectives | APL-F1E270 | - Video lecture: Lesson 2 Fire Protection
- Teacher Handouts: Fire Photography Image
- Student Handouts: Lab Safety Packet Activity
- Video Resources: Magnesium Reaction: https://www.youtube.com/watch?v=... |
| DAY 6      | Lesson 3: Select Aircraft Operation | Lesson 3 Objectives | APL-F1E275 | - Video lecture: Lesson 3 Select Aircraft Operation
- Teacher Handouts: Avionics Terms Activity
- Student Handouts: Lab Safety Packet Activity
- Video Resources: Aircraft Engine Fire: https://www.youtube.com/watch?v=... Engine Fire Prevention: https://www.youtube.com/watch?v=... |

TOTAL MODULE 1 TIME: 6 Days | 18 hrs.
Course Introduction

Course Completion Time
This course will be completed online through EducateWorkforce.com. Instructors are also provided with accompanying lesson plans, student activities, and hands-on projects/tubs as optional resources for their instruction.

- Safety, Ground Operations, and Servicing Online Course - 5.5 Hours (online coursework only)
- Lesson Plans (with activities and labs) - 12.5 Hours (online course + lesson plans/tubs)

Suggested Readings
The companion eBook, Aviation Maintenance Technician: Handbook/General, aligns with the video lectures, activities, and other module materials. The eBook may be viewed by clicking on the eBook icon found within each module or the eBook link.

Course Format
- Self-Led
- eBooks
- Film/Video Lectures
- Activities and Assessments

For more information on how to navigate the course or for technical support, please visit the online course.

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About the Course
This course will provide learners with important safety policies and procedures for ground operations and servicing of aircraft. Students will learn safety procedures in the areas of the shop, flight line, and flight protection. You will also learn proper teardown procedures for multiple types of aircraft. Ground movement of aircraft, such as engine starting and towing/taxing, is also reviewed. Finally, you will learn about servicing the various systems in an aircraft such as air, oil, fluids, and fuel.

It is noted that information in this course is a general guide for safety, ground operations, and servicing. All manuals for specific aircraft, equipment, and machine tools should be reviewed and understood prior to any operations.
Objectives & Standards

Course Objectives
The following objectives represent the major course expectations.

- Objective 1: Identify and describe common procedures and practices for shop and flight line safety, including fire safety.
- Objective 2: Identify and describe the practices for safe ramp operations including towing and tie-down procedures, and engine start up and shutdown.
- Objective 3: Identify the precautions and procedures for servicing an aircraft in the areas of fluids, ground power units, and oxygen.
- Objective 4: Describe the precautions and procedures to fuel and defuel an aircraft.

ACS Codes
The following knowledge, risk management, and skill elements are required for ground operations and servicing as set forth in the FAA Airman Certification Standards. Each module and lesson provides a detailed alignment of each standard.

- AM1F.61 - K16
- AM1F.61 - R10
- AM1F.61 - S12

Course Outline

Course Goal
The goal of this course is to impart the skill and knowledge set forth in the Federal Aviation Administration mechanic airman certification standards with regards to safety, ground operations, and servicing.
Objectives & Standards

Course Objectives
The following objectives represent the major course expectations.

- Objective 1: Identify and describe common procedures and practices for shop and flight line safety, including fire safety.
- Objective 2: Identify and describe the practices for safe ramp operations including towing and takedown procedures, and engine start up and shutdown.
- Objective 3: Identify the precautions and procedures for servicing an aircraft in the areas of fluids, ground power units, and oxygen.
- Objective 4: Describe the precautions and procedures to fuel and defuel an aircraft.

ACS Codes
The following knowledge, risk management, and skill elements are required for ground operations and servicing as set forth in the FAA Airman Certification Standards. Each module and lesson provide a detailed alignment of each standard.

- AML.F.1 - K16
- AML.F.13 - K16
- AML.F.31 - 512

New Feature: Interactive Outline
Module 01

Shop Line Safety and Fire Procedures

This module will review shop safety and policies in the following areas:
1) Shop safety when dealing with electricity, gases, hazardous materials, and machine tools.
2) Flight Line Safety such as hearing protection, foreign object damage (FOD), safety around aircraft, and fire safety.
3) Fire Protection including classification of fires, types and operation of fire extinguishers, identification, inspection, and use of fire extinguishers.

The information in this module is for the purpose of introduction and a general guide. It is important to review the safety precautions and policies of all manuals for specific equipment used.

Module Goal

Upon completion of this module, course participants will understand and apply proper precautions or actions for shop, flight line, and fire safety. It is important for participants to know that safety is everyone’s responsibility. For each area, participants will be able to describe the basic guidelines for safety and recognize common safety symbols. When provided with a safety situation, participants will be able to identify precautions and/or procedures to prevent an accident or take action if an accident happens.

Objectives and Standards

Module 1 Objectives

After completing this module, learners will be able to:
- Identify precautions and procedures essential for shop safety.
- Describe safety precautions necessary while working in the flight line.
- Differentiate the types of fires and fire extinguishers, and describe which type of extinguisher is used on which class of fire.

ACS Codes

The following Airline Certification Standards (ACS) are covered within this module:

- L3AM1.LF.012
- L3AM1.LF.02
- L3AM1.LF.031
- L3AM1.LF.036
- L3AM1.LF.10
- L3AM1.LF.012

Orienting Questions

As you complete the sections within this module, you should be able to answer the following questions:

- What are basic precautions for shop safety in the areas of electricity, compressed gases, hazardous materials, and machine tools?
- What types of protections should be taken while working in the flight line?
- What are the different classes of fire?
- What are the different types of fire extinguishers and which are more appropriate for each class of fire?
Lesson Plan

Lesson 1: Servicing an Aircraft

This lesson explores the manual aircraft service procedures.

Lesson Duration: Two 45-minute class periods

This lesson plan is to be used with Module 1, Lesson 1 of the Safety, Ground Operations, and Servicing Online Course.

ACS Codes

The following ACS Codes will be covered in this lesson. Click on ACS Code below to see the full list of the students.

- A1.2.1 Aircraft oil, hydraulic and pneumatic, and servicing procedures
- A1.2.2 Oxygen system servicing procedures
- A1.2.3 Oxygen system servicing procedures
- A1.2.4 Oxygen system servicing procedures
- A1.2.5 Oxygen system servicing procedures
- A1.2.6 Oxygen system servicing procedures

Lesson Objectives:

After completing this course, students will be able to:

- Identify the aircraft components of the aircraft that have required annual ACS oil, fuel, air systems.
- Describe the proper procedures for servicing aircraft fluids.
- Explain the different types of ground power units and how each one is used.
- Describe the precautions and procedures for servicing oxygen systems in an aircraft.
- Describe the procedure for servicing an aircraft.

Key Terms:

The following key terms will be covered in this lesson. Click on [Glossary] to view each definition.

- Aviator's Oxygen
- Fuel Grade
- Ground Power Unit (GPU)
- Jet Fuel

Summary of Tasks/Actions:

**DAY 1**

Before class, have students read the Chapter 1 textbook pages 1-4 to 1-26.

5 min – Introduction Discussion Activity

In small groups, have the students list as many routine car services that they do not. Have each group share their lists and write them on the board. As each new service is added to the list, ask students if they know how often it should be performed. Ask if anyone knows how to perform the service. If they don’t know, have them research it. Ask them: “If you need to do that service, what would you do?”

5 min – Video Lecture

O (Note: class or individually) Have students view the online video lecture for Lesson 1: Servicing Aircraft. While watching the video lecture, have the students fill in the 3.3 Student Handout – Dated Notes. Be sure to review today’s key terms from video lecture with students.

20 min – Reading Activity

Have students complete the following:

1) Read the Ground Service Connections page.
2) Read the Pneumatic Ground Supplies page and watch the video.
3) Read the Power System pages.
4) Complete the Virtual Lab: Connecting External Power to an Aircraft.
5) Read the Ground Service Connections page.
6) Read the Pneumatic Ground Supplies page.
7) Read the Electrical Ground Supplies page.
8) Complete the Virtual Lab: Connecting External Power to an Aircraft.

5 min – Summary/Review

To summarize and close class, review the lesson summary and key terms and have students complete Lesson 1 Activity 1 and 2 in the online course. Assign the following Take Home Task to extend student learning, option to assign the following Take Home Task to extend student learning.

Take Home Task:

Have students watch the Aircraft Engine Systems video [Link] to see an aircraft being serviced. Ask students to write down 5-6 take-away points from the video.

**DAY 2**

Before class, please have students read the Chapter 1 textbook pages 43 to 1-26.

5 min – Introduction

Play the following Hydraulic Systems video [Link] for the class to give them a basic overview of what a hydraulic system is. After the video, have students work in pairs or small groups to sketch a diagram (labeled the parts) of how a basic hydraulic system works.

20 min – Reading Activity

Have students continue to complete the following reading activities in Lesson 1 of the online course. 1) Read the Aircraft Oil, Hydraulic and Pneumatic, and Servicing page. 2) Read the Ground Service Connections page. 3) Read the Pneumatic Ground Supplies page and watch the video. 4) Read the Power System page. 5) Read the Pneumatic Ground Supplies page. Let students know to add any additional information into their guided notes.

25 min – Practice Activity

Have students watch the following De-icing video [Link] followed by reading the Fluids Basics webpage [Link] about de-icing fluids. Have students complete the Virtual Lab. Have students begin on the Labor page and should begin the beginning of the module. Continue until the end of the module by clicking next section to move to the next page. At the end of the module, ask students for questions for students to answer online.
New Feature: Interactive Glossary

Glossary

Module 1: Shop and Flight Safety and Fire Protection

Lesson 1: Shop Safety

- Compressed Gas
- Foreign Object Damage (FOD)
- Fire Prevention

Lesson 2: Fire Protection

- Class A Fire
- Class B Fire
- Class C Fire

Key Terms:

- Aviator's Oxygen
- Fuel Grade
- Ground Power Unit (GPU)
- Jet Fuel

Summary of Tasks/Actions:

Day 1

Before class, have students read the Chapter notes pages 24 to 32.

5 min – Introduction Discussion Activity

In small groups, have the students list as many routine car services that they know of. Have each group share their lists and write on the board. Ask each new service in addition to the list. Ask students if they know how often it should be performed and if anyone knows how to perform the service. If they don't, have them ask for help to service. Ask students if they know where they could find that information. Once the list is completed, ask students what happens if a car is not serviced regularly. Then, for the whole class, play the following Car Service video: [YouTube link] explaining the importance of servicing your car regularly.
Instructor Course Guide

Lesson 1 - Servicing an Aircraft

3.1 Guided Notes

Name: ____________________________
Date: ____________________________

As you watch the Lesson 1 Servicing an Aircraft video lecture, fill in the organizer with important information.

Servicing Overview:
- Aircraft systems are an important _______ function. This is only a general guide for servicing aircrafts.
- Check the _______ to determine the proper servicing procedures.
- If any aircraft fluids are spilled on clothing or skin, _______ as soon as possible due to _______.
- If you are servicing tires or struts, _______.

Aircraft Fluids:
- Oil
  - Oil is checked using a _______.
  - Reciprocating engine: check _______.
  - Turbine engine: check _______.
  - Use caution if _______.
  - Never _______.
  - Always use the correct type of _______ for the _______.

Hydraulic
- Bleed pressurized reservoirs _______.
- Take extra effort not to _______.
- When changing _______ make sure _______.
- After servicing _______.

Electric Ground Power Units:
- Electric ground power can be _______.
- Each vary in _______.
- When in use, _______.
- NEVER _______.

Ground Support Air Units:
- Ground support air units are used to provide:
  - Typically used if _______.

Oxygen Servicing:
- Servicing should be accomplished in _______.
- Servicing area must be _______.
- All maintenance actions should _______.

Oxygen Types:
- Two types of oxygen for use on aircraft: _______ and _______.
- _______ people are required to _______.
- In the aircraft, _______ during this process in case of emergency.
- Only oxygen labeled _______ should be used in aircraft systems.
  - Contains _______.
  - Gaseous oxygen, while nonflammable, _______.
  - Always use _______ when servicing oxygen systems.
Lesson 3 - Select Aircraft Operations
1.3 Aviation Terms Activity

Name: ____________________________
Date: ____________________________

Answer the following questions, given the images below.

1. Nacelle:

2. Cowling:

3. Chocks:

If you need some help, you can review the Lesson 3 Summary and Key Terms page. You can also use the online dictionary https://www.collinsdictionary.com/us/dictionary/english.

4. What do you think are the purposes of the nacelle and cowling to the aircraft?

ANSWER KEY

1. Nacelle: a streamlined enclosure on an aircraft, especially for an engine

2. Cowling: a removable metal covering that houses the engine and sometimes part of the fuselage or nacelle

3. Chocks: a block of material wedged under the tires of an aircraft to prevent it from rolling

If you need some help, you can review the Lesson 3 Summary and Key Terms page or use the online dictionary https://www.collinsdictionary.com/us/dictionary/english.

4. What do you think are the purposes of the nacelle and cowling to the aircraft?
   Answers will vary but may include something along the lines of cooling and streamlining the aircraft.
Instructor Course Guide

Lesson 3 - Select Aircraft Operations
1. 3 Safety Skit Activity

Name: _______________________
Date: _______________________

This module has included many concepts of shop and aircraft safety. In small groups of 3-4 students, you will choose a safety concept from this module and create a short 3-5 minute skit to perform to the class today. Be sure everyone in the group plays a role.

Example: A group demonstrates how to choose and use a fire extinguisher properly.

Safety Skit Rubric

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>Exceptional 4</th>
<th>Adequate 3</th>
<th>Acceptable 2</th>
<th>Attempted 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding of Topic</td>
<td>Information is accurate</td>
<td>Information is mostly accurate</td>
<td>Information is minimally accurate</td>
<td>Information is incoherent</td>
</tr>
<tr>
<td>Cooperation</td>
<td>All members contribute</td>
<td>Individually contribute and respect others</td>
<td>Some members contribute</td>
<td>Few members contribute</td>
</tr>
<tr>
<td>Presentation</td>
<td>Shows confidence</td>
<td>Ineffective</td>
<td>Presenting</td>
<td>Little to no confidence</td>
</tr>
</tbody>
</table>

Specific topics to review in eBook Chapter 1:
- Page 2 Electrical Safety
- Page 2 Safety Around Compressed Gases
- Page 3 Safety around Hazardous Materials
- Page 3 Safety around Machine Tools
- Page 4 Hearing Protection
- Page 4 Foreign Object Damage (FOD)
- Page 5 Safety around Airplanes
- Page 5 Fire Safety
- Page 6 Classification of Fires
- Page 6 Types and Operation of Shop and Flight Line Fire Extinguishers
- Page 7 Inspection of Fire Extinguishers
- Page 7 Identifying Fire Extinguishers
- Page 8 Using Fire Extinguishers

Review at the beginning of Module 1 in EducateWorkforce:
- Introduction
- Objectives
- Reviewing Questions – be sure you can answer these!

Review at the end of Module 1 in EducateWorkforce:
- Key Concepts
- Key Terms

Review for each lesson in Module 1 in EducateWorkforce:
- Objectives
- Summary and Key Terms

Review Notes and any activities from Module 1

To prepare for Module Quiz, review each of the following using your guided notes and the ebook. Be sure to add any missing information into your guided notes.
**PRACTICAL PROJECT**  Safety, Ground Ops, & Servicing Skill Stations

**Project Overview**

With project focus will be on small group stations, complements of fixed tasks, and answer a series of questions to demonstrate Safety, Ground Operations, and Servicing knowledge and skills. Through this students will be able to:

- **Project Duration:** Two 45-minute class periods

**Pre-Requisites**

- FAA-0009-G-006: Safety, Ground Operations, and Servicing Course

**Learning Outcomes**

The students will be able to:

- Demonstrate the successful completion of several skill through application and critical thinking in order to safely and effectively perform safety, ground operations, and servicing tasks.

**Supplies/Materials**

- 2 copies of FAA-0009-G-006 handbook
- Water bottles (at least 2 per group member) and water cooler
- Small table with tools
- Tools (provided)
- Paper towel and wipes
- Safety glasses and gloves

**Equipment**

- Computer with Microsoft Flight Simulator software and keyboard (per every 2 students)
- Printed papers

**Attachments**

- Station 1: Customer Service - Aircraft Part 1
- Station 2: Customer Service - Aircraft Part 2
- Station 3: Aircraft Parts - Repairing Engine
- Station 4: Aircraft Parts - Repairing Equipment
- Station 5: Aircraft Parts - Repairing Systems
- Station 6: Aircraft Parts - Repairing Aircraft

**ACIS Codes**

The following Aircraft Certification Standards will be covered in this project:

- 14CFR3.4(a) Foreign object damage control procedures
- 14CFR3.5(a) Inspections and maintenance of aircraft
- 14CFR3.6(a) Preventative maintenance of aircraft
- 14CFR3.7(a) Repair and alteration of aircraft
- 14CFR3.8(a) Maintenance of aircraft
- 14CFR3.9(a) Inspections and maintenance of aircraft

**References**

- FAA Advisory Circular 00-90-20
- FAA Advisory Circular 00-90-10
- FAA Advisory Circular 00-90-15
- FAA Advisory Circular 00-90-20
Instructor Notes:

Day 1: Prep & Plan

1. Receive class sign-up and Orientation with the Course Outlines/Handouts.
2. Ensure that all necessary equipment and materials are prepared.
3. Divide the class into smaller groups of approximately 3-4 students.
4. Each group will receive a station sign-up sheet based on their assigned station.

Day 1 Equipment/Materials:
- 3 copies of FAA-H-8083-50A (Handbook)
- Flashlights with (working light, functioning battery, and extra battery pack)
- Aprons for student use
- Aaero Quiz Sheet: Name card
- Aircraft ground station
- Aircraft ground station
- Aircraft ground station
- Aircraft ground station

Day 1 Procedures:

Set out the following instruction sheets cards and base one at each station.

Station 1:
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station

Station 2:
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station
- Aircraft Ground Station

Plan Procedures:

Day 2:

5 minutes - Introduction
- Introduce the lesson to the group. (Give a short introduction of the activities and groups of procedures that will be discussed or written instructions outlining the lessons.)
- Each group will have two instructors.
- Each station will be assigned to a group of students.
- They will work on their assigned station.

20 minutes - Small Group Activity
- Facilitate each group so they receive the assigned lesson and activities regarding the topics.
- Each group should complete the tasks within the allotted time.

5 minutes - Wrap-Up
- Facilitate each group to complete their assigned tasks in a time-efficient manner.
Sample Virtual Reality

Paint Preparation: Composite Wing
More Information

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