



## Fuel Safety Supervisor Course Syllabus

As mandated by Federal guidelines, ACE, Inc. developed a comprehensive program national training program encompassing 16 hours of study. This course exceeds the requirements set forth by the Federal Aviation Administration which mandates fueling supervisors receive initial and recurrent training in fuel and fire safety from an authorized provider. It is intended to provide fuel handling personnel the knowledge to safely provide fueling services at our nation's airports and maintain a clean fuel product thereby increasing safety in our skies. When successfully completed the student will have met the requirements of 14 CFR 139.321 (e)(1) of the Federal Registry.

### **Lesson 1: Orientation**

- Lesson Objectives
- Course Purpose
- Expected outcomes
- Course Topics
- Course Testing and Completion
- 14 CFR part 139.321 requirements
- Additional requirements of the airport (ACM)
- Lesson Review
- Lesson Quiz

### **Lesson 2: National and Local Codes and Ordinances and Documents**

- Lesson Objectives
- AC 150/5230-4
- NFPA 407
- Lesson Review
- Lesson Quiz

### **Lesson 3: Basic Fuel Safety**

- Lesson Objectives
- Categories of Aviation Fuel
- Fire Hazard Properties of Aviation Fuel
- Definitions
- Fire Tetrahedron
- Classes of Fuel
- Methods of Heat Transfer
- Stages of Fire
- Extinguishment Theory
- Lesson Review
- Lesson Quiz

#### **Lesson 4: Proper handling and storage of fuels and lubricants, oxygen**

- Lesson Objectives
- Safety Precautions
  
- Properties of Oxygen
- Proper Handling of Lubricants
- Proper Handling of Greases
- Proper Handling of Hydraulic Fluids
- Lesson Review
- Lesson Quiz

#### **Lesson 5: Hazardous Materials**

- Lesson Objectives
- Department of Transportation hazardous material definition
- Hazardous Materials Abbreviations
- Material Safety Data Sheets
- Types of Exposures
- Decontamination Terminology
- General Toxin Types
- Modes of Entry
- Emergency Response Actions
- “Hazard Communication Right to Know” Video Presentation
- Compliance Agencies
- Lesson Review
- Lesson Quiz

#### **Lesson 6: Personal Protection**

- Lesson Objectives
- Personal protection, including eyes, ears, hands and feet.
- Types of clothing, shoes/boots,
- Prohibition on carriage of smoking materials, first aid
- Personal Protection Video Presentation
- Lesson Review
- Lesson Quiz

#### **Lesson 7: Spills and Leaks**

- Lesson Objectives
- Your Responsibilities
- Control the Leak and Spill
- Clean up of materials
- Decontamination of Personnel and Equipment
- Lesson Review
- Lesson Quiz

### **Lesson 8: Controlling Storage Areas**

- Lesson Objectives
- Fences, gates/locks, identification of products
- Signs, emergency controls
- Low visibility and night fueling operations
- Proper procedures for fuel farm operations
- Safety awareness
- Use of emergency shutoffs,
- Communications for assistance
- Lesson Review
- Lesson Quiz

### **Lesson 9: Fire Safety in Fuel Farm and Storage Areas**

- Lesson Objectives
- Verification of product types
- Restrict unauthorized access
- Fuel Farm procedures (inspection, off/on loading)
- Proper procedures for fuel equipment use/storage (nozzle covers, securing of equipment when not in use)
- Leak/spill prevention
- Product leaks/contamination
- Lesson Review
- Lesson Quiz

### **Lesson 10: Weather effects on fueling operations**

- Lesson Objectives
- Thunderstorms
- Winter Storms
- Lightning Hazards
- Lesson Review
- Lesson Quiz

### **Lesson 11: Fire Safety in Mobile Fuelers, Fueling Pits and Cabinets**

- Lesson Objectives
- Vehicle Safety Parts
- Weight and balance/driving requirements/speed precautions,
- Driver qualifications
- Light Gun Signals
- Effects of Jet Blast
- Vehicle placement for fueling operations
- Fueling Pit safety/procedures/product leaks
- Fueling Cabinet safety/procedures
- Parking requirements
- Lesson Review

- Lesson Quiz

### **Lesson 12: Aviation Refuelers**

- Lesson Objectives
- Planning and Design
- Equipment
- Inspections
- Lesson Review
- Lesson Quiz

### **Lesson 13: Fuel Contaminants**

- Lesson Objectives
- Water Contamination
- Particulate Contamination
- Surfactant Contamination
- Microorganism Contamination
- Cross Contamination
- FSII and DEF Hazards
- Lesson Review
- Lesson Quiz

### **Lesson 14: Receiving Fuel Shipments**

- Lesson Objectives
- Before Loading Operations
- During Loading operations
- After Loading Operations
- Recording of Data
- Lesson Review
- Lesson Quiz

### **Lesson 15: Fuel Filtration**

- Lesson Objectives
- Filter Separators
- Filter Monitors
- Microfilters
- Clay Treatment
- Dehydrators
- Filter Vessel Appurtenances
- Filter Vessel Data
- Filter Element Replacement Criteria
- Differential Pressure
- Lesson Review
- Lesson Quiz

### **Lesson 16: Fuel Storage Facilities**

- Lesson Objectives
- Planning and Design
- Equipment
- Inspections
- Lesson Review
- Lesson Quiz

### **Lesson 17: Aviation Fuel Quality Testing**

- Lesson Objectives
- API Specific Gravity Test
- Filter Membrane Test
- Free Water Test
- Fuel System Icing Inhibitor (FSII) Test
- White Bucket Test
- Lesson Review
- Lesson Quiz

### **Lesson 18: Operational Procedures**

- Lesson Objectives
- Filter Element Replacement
- Misfueling Prevention
- Nozzle Screen Inspection
- Water Defense Systems
- Recordkeeping
- Lesson Review
- Lesson Quiz

### **Lesson 19: Operation and Maintenance of Fuel Storage Facility**

- Lesson Objectives
- What is aviation fuel?
- Handling and Safety Procedures
- Underground systems
- General Conditions
- Fire Extinguishers
- Bonding Reels, Cables and Clamps
- Fuel Spills and Leaks
- Hoses
- Nozzles and Nozzle Screens
- Use of nozzle covers
- Filter Vessels and Elements
- Filter Separators and Elements
- Differential and Nozzle Pressure Gauges
- Filtering System Components

- Floating Suctions
- Tank Interiors and Vents
- Tank high Level Controls
- Securing equipment
- Lesson Review
- Lesson Quiz

### **Lesson 20: Adult Learning and Instructional Methodology**

- Lesson Objectives
- Identify the key principles of adult learning theory
- Common teaching methods
- Common visual aids,
- Review a sample daily lesson plan
- Basics of developing a course syllabus
- Review the top ten requirements of good teaching,
- Cover lesson planning procedures
- Address the principles of adult learners
- Lesson Review
- Lesson Quiz

### **Lesson 21: Fire Code Briefing and Recordkeeping Requirements**

- Lesson Objectives
- National Code NFPA 407
- Local Adoption of National Code
- Local Code
- Procedures for specialized equipment
- Training requirements
- Supervisors Training (Bi-Annual)
- Fuel Handler Training (Bi-Annual)
- Inspections by authority having jurisdiction
- Lesson Review
- Lesson Quiz

### **Lesson 22: Final Assessment**

- Questions and Answers
- Testing
- Finish