

FE157
Basic Fire Equipment

2 Credits

Instructor: TBA

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FE157 Version: 2



Basic Fire Equipment

Calendar Description

This basic level course provides students with the knowledge and skills to understand and maintain common equipment used within the fire service. This includes the operational features of today's fire apparatus and portable equipment, and their maintenance requirements. Additional topics include: engine operation, electrical and braking systems, portable pumps, generators, powered equipment and tools, and other auxiliary equipment tools and appliances.

Rationale

This is a required course for the Emergency Services Technology program.

Prerequisites

None

Co-Requisites

None

Course Learning Outcomes

Upon successful completion of this program, students will be able to

1. identify and explain common engine power, fuel, and lubrication requirements for the fire service apparatus and auxiliary equipment.
2. demonstrate the ability to conduct daily inspections and maintenance required for:
 - a. ladders
 - b. hose, nozzles and appliances
 - c. self contained breathing apparatus
 - d. and other relevant fire service equipment
3. identify fuel requirements for fire service apparatus and auxiliary equipment.
4. explain:
 - a. hydraulic and air brake systems and components
 - b. steering systems and components
 - c. exhaust systems and components

- d. drive systems and components
- e. pump systems and components
- f. electrical systems and components
5. identify tire construction, pressures and mounting systems
6. identify Occupational Health and Safety requirements related to exhaust systems, tires, and other general equipment.
7. explain general fire apparatus body construction and demonstrate cleaning and maintaining body systems and components

Resource Materials

Reference Text(s):

Cengage Learning. (2010). *Canadian firefighter's handbook firefighting & emergency response* (1st ed.). Clifton Park, NY: Delmar.

IFSTA. (2008). Goodson, C. and Murnane, L. (Eds.). *Essentials of firefighting and fire department operations* (5th ed.). Stillwater, OK: Fire Protections Publications.

Jones and Bartlett. (2009). *Fundamentals of fire fighter skills* (2nd ed.). Sudbury, MA: Jones and Bartlett Publishers.

IFSTA. (2009). *Aerial apparatus driver/operator handbook* (2nd ed.). Stillwater, OK: Fire Protection Publications Oklahoma State University.

Henry, Don. (2003). *Fire department pumping apparatus maintenance* (1st ed.). Stillwater, OK: Fire Protection Publications Oklahoma State University.

Conduct of Course

A. Methods

1. Lecture

B. Aids

1. PowerPoint
2. Whiteboard

C. Assignments

Evaluation Procedures

There will be a 50 question exam based on the objectives with the grades determined using the grade scale under the grades section of this course outline.

Grade Equivalents and Course Pass Requirements

The final mark is given as a letter grade.

Letter	F	B-	B	B+	A-	A	A+
Percent Range	0-69	70-74	75-79	80-84	85-89	90-94	95-100
Points	0.00	2.70	3.00	3.30	3.70	4.00	4.00

Attendance

Regular attendance is essential for success in any course. Absence for any reason does not relieve a student of the responsibility of completing course work and assignments to the satisfaction of the instructor. Poor attendance may result in the termination of a student from a course.

Course Units/Topics

Topics include but not necessarily in this order:

1. Engine Types
 - a. 4 Stroke
 - i. Gasoline
 - ii. Diesel
 - b. 2 Stroke
 - i. Gasoline
 - ii. Diesel
 - c. Air Cooled

2. Small Engine Maintenance
 - a. Daily inspections
 - b. Adjustments
 - c. Maintenance
 - d. Trouble shooting

3. Trucks
 - a. Pumpers
 - i. Daily Inspections
 - b. Rescue
 - i. Daily Inspections

- c. Ladders/Aerials
 - i. Daily Inspections
- 4. Fluids
 - a. Types
 - i. Fuels
 - 1. Gas
 - 2. Diesel
 - 3. Mixed
 - ii. Oils
 - iii. Coolants
- 5. Belts
 - a. Construction
 - b. Adjustment
- 6. Brake Systems
 - a. Hydraulic
 - b. Air
- 7. Steering Systems
- 8. Exhaust systems
 - a. OH&S hygiene issue
- 9. Drive Systems
 - a. PTO
 - b. Standard
 - c. Automatic
- 10. Tires
 - a. Pressure
 - b. Construction
 - c. Mounting systems
- 11. Electrical
- 12. General Body
 - a. Construction
 - b. Cleaning

13. General Equipment
 - a. Ladders
 - b. Hose
 - c. Appliances
 - d. Nozzles
 - e. Self Contained Breathing Apparatus
 - i. Cylinder
 - ii. Apparatus

14. Pump Systems
 - a. Centrifugal
 - b. Positive
 - c. Maintenance
 - i. Glands
 - ii. Pump testing



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