

SECTION 15 FIRE BEHAVIOR (FIRE SCIENCE) - 16 HOURS**BASIC – 8 Hours**

- 15-01.01 Trainee shall define heat and fire.
- 15-01.02 Trainee shall define the fire triangle and tetrahedron.
- 15-01.03 Trainee shall identify two (2) chemical, mechanical, and electrical energy heat sources.
- 15-01.04 Trainee shall define the following stages of fire:
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|-------------------|--------------------------|
| A. incipient | E. steady state |
| B. flame spread | F. clear or free burning |
| C. hot smoldering | G. back draft explosion |
| D. flashover | |
- 15-01.05 Trainee shall define the three (3) methods of heat transfer.
- 15-01.06 Trainee shall define the three (3) physical states of matter in which fuels are commonly found.
- 15-01.07 Trainee shall define the hazard of finely divided fuels as they relate to the combustion process.
- 15-01.08 Trainee shall define:
- | | |
|----------------|-------------------------------------|
| A. flash point | C. ignition temperature |
| B. fire point | D. upper and lower explosive limits |
- 15-01.09 Trainee shall define concentrations of oxygen in air as it affects combustion.
- 15-01.10 Trainee shall identify three products of combustion commonly found in structural fires which create a life hazard.
- 15-01.11 Trainee shall identify characteristics of water as it relates to its fire extinguishing potential.

INTERMEDIATE - 2 Hours

- 15-02.01 Trainee shall define the following units of measurements:
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|-------------------------------|----------------------------------|
| A. British Thermal Unit (BTU) | D. Calorie (C) |
| B. Fahrenheit (F°) | E. Joule, the SI unit for energy |
| C. Celsius (C°) | |
- 15-02.02 Trainee shall define thermal balance and imbalance.

ADVANCED - 6 Hours

- 15-03.01 Trainee shall identify chemical by-products of combustion.
- 15-03.02 Trainee shall define the diffusion flame process.
- 15-03.03 Trainee shall define the fire extinguishment theory.
- 15-03.04 Trainee shall identify pressure and velocity.