

Combustion Basics

OEM: Rockwell Automation • Duration: 2 Days (16 hrs) • Code: ICS-120

COURSE MODULES & TOPICS

Objectives

- Explain the flame triangle
- Describe the relationship between heat, temperature, and specific heat
- List and discuss the different methods of heat transfer
- Identify and discuss the by-products of combustion
- Identify and describe the importance of stoichiometric conditions
- Describe the construction of basic combustion systems
- Describe the safety equipment associated with a combustion system
- Design a basic fuel train for a combustion system given components

Student Materials

- Student Manual includes the key concepts, definitions, examples, and activities presented in this course
- Lab Guide includes the hands-on exercises

Course Agenda

Day 1

- Explaining the theory of combustion
- Breaking down flame structure
- Correlating the relationship between heat, temperature, and specific heat
- Applying the concept of fuel/air ratio
- Measuring percent CO₂, O₂, and combustibles
- Listing general types of burners

Day 2

- Listing the various control valves, blowers, regulators, and switches associated with various burners
- Differentiating the three modes of heat transfer
- Stating the heat transfer rates
- Explaining coal preheating
- Review