This course provides learners with an overview of the basic concepts of process control systems. It identifies and describes the main mode of process control, identifies the main types of control valves and explains how these control valves operate.

**Learning Methods**
- e-learning

**Targeted Participants**
All personnel requiring a more detailed knowledge of process control and fault diagnosis within the Oil and Gas Industry.

**Business Benefits of E-learning**
Our e-learning courses will not only improve your business efficiency and employee performance, but will also reduce training costs and down time compared to traditional learning, whilst improving knowledge retention and compliance.

**Features**
- Automatic remediation of incorrectly answered questions
- Integrated trainee results management system
- High quality illustration based animations and animated sequences
- Continuous and final assessment
- SCORM™ 1.2 Compliant

**Course Content**
- Introduction to Process Control
- Fundamental Principles of Control Systems
- Components of a Control System
- Computer Controlled Systems
- Fault Finding

**Learning Objectives**
- Identify the basic concepts underlying process control systems
- Describe the basic concepts underlying process control systems
- Explain the importance of process control in the chemical industry
- Identify the main types of automatic control systems
- Explain how the main types of automatic control systems function
- Identify the different types of closed loop control systems
- Describe the different types of closed loop control systems
- Identify the main modes of process control
- Describe the essential features of on/off process control
- Identify the applications of on/off process control
- Describe the applications of on/off process control
- Describe the limitations of on/off control
- Describe the essential features of proportional control
- Differentiate between proportional band and gain
- Identify the applications of proportional control
- Describe the applications of proportional control
- Illustrate how you would calculate the output compared to deviation for proportional settings
- Describe the essential features of an integral control system
- Identify the applications of integral control
- Describe the applications of integral control
- Describe the essential features of a derivative control system
- Identify the applications of derivative control
- Describe the applications of derivative control
- Explain what a three-term controller is
- Explain the use of the three-term controller as a means of stability of response
- Identify the hazards associated with the transfer of flammable, toxic or corrosive materials
- Describe the hazards associated with the transfer of flammable, toxic or corrosive materials
Process Control and Fault Diagnosis

- Identify some precautionary measures that can be used to prevent hazards from arising
- Identify some devices that are used to minimise dangers that arise from the excessive build-up of pressure in pipelines
- Describe those devices that are used to minimise dangers that arise from the excessive build-up of pressure in pipelines
- Describe the start-up procedures for centrifugal and positive displacement pumps
- Describe the shutdown procedures for centrifugal and positive displacement pumps
- Identify the hazards associated with the cleaning of pipes
- Describe the hazards associated with the cleaning of pipes
- Identify the main types of control valves
- Explain how the main types of control valves operate
- Identify the main types of valve plug operation
- Explain how the main types of valve plugs operate
- Identify the main functions of valve positioners
- Identify some important factors to consider when selecting a valve positioner
- Identify the factors that affect the location of detecting elements within a control system
- Describe the factors that affect the location of detecting elements within a control system
- Identify the different types of computer control systems used
- Describe the features and operation of the DDC system
- Identify the benefits of a DDC system over conventional panel-based control systems
- Describe the benefits of a DDC system over conventional panel-based control systems
- Identify the disadvantages of a DDC system
- Describe the features and improved reliability of a DCS system
- Identify the components of a DCS
- Describe the components of a DCS
- Identify the benefits of a DCS
- Identify the equipment that is required for an operator to communicate with a DCS
- Describe the equipment that is required for an operator to communicate with a DCS

- Describe the basic principles of the SCADA system
- Identify the features of the SCADA system
- Describe the features and operation of the SCADA system
- Summarise the benefits of the SCADA system
- Define a fault
- Differentiate between a fault and the symptoms produced by a fault
- Illustrate how you would differentiate between a fault and the symptoms produced by the fault
- Identify different methods and techniques of locating faults
- Explain the different methods and techniques of locating faults
- Identify the steps required to diagnose a fault and classify the cause of the failure
- Describe the steps required to diagnose a fault and classify the cause of the failure
- Identify the type of remedial action that should be taken when a fault has been located
- Describe the type of remedial action that should be taken when a fault has been located

To request a demonstration or to purchase this course please contact your Atlas Account Manager or email info@atlasknowledge.com