FPSO Overview

Duration: 180 mins  |  Level: Entry  |  Pass mark: 80%

Course Description:

Who is the course for?
This eLearning course is aimed at individuals working in the oil and gas industry. The course is particularly suited to newcomers to the industry as it provides a comprehensive overview of FPSO systems and operations.

Is previous experience required?
You do not need prior knowledge or experience to complete this course and it is assumed that you are competent in your designated role.

How will the course benefit me?
Floating Production, Storage and Offloading units (FPSOs) are used all over the world in the oil and gas industry. This course will give you an understanding of the various systems on board a typical FPSO, including both marine systems and oil and gas processing facilities.

The knowledge gained in this course will help you to understand the role that FPSOs play in oil and gas production and processing. It will also introduce the different types of FPSO used today and their various strengths and weaknesses.

How will the course benefit my company?
By ensuring you have a good understanding of FPSO facilities and operations, you will increase your familiarity with the oil and gas industry as a whole and have a better appreciation of the work that you and your company do.
What standards are referenced in the course?

This course does not refer to specific legislation or standards but is written to current HSE guidelines and industry best practice.

Is there an assessment?

Once you have completed the course, you will be asked a series of questions to check your knowledge and understanding. These are based on the learning objectives for the course and have a pass mark of 80%.

Learning Objectives:

• Define the Floating, Production, Storage and Offloading Vessel (FPSO)

• Describe the basic physical structure of an FPSO

• Identify the different types of FPSOs used today

• Differentiate between the Converted Tanker FPSO and the New Build FPSO

• Differentiate between Powered and Unpowered FPSOs

• Identify the different types of mobile production/drilling units

• Identify the advantages and disadvantages of each type of mobile production/drilling unit

• Define station keeping

• Explain why station keeping is important on an FPSO

• Identify the station keeping methods for FPSOs

• Explain how anchors and chains are used as a method for station keeping

• Explain how wire ropes are used as a method for station keeping

• Explain how dynamic positioning is used as a method for station keeping

• Identify when the different methods for station keeping should be used

• Define stability

• Explain the importance of stability on FPSOs

• Identify the different methods of maintaining stability

• Explain the role of ballasting in maintaining stability

• Explain the role of loading in maintaining stability

• Explain the role of cargo loading in maintaining stability

• Define turrets

• Explain how a turret is constructed

• Identify the different types of turrets used on FPSOs
• Describe the internal turret
• Describe the external turret
• Describe the rotating turret
• Describe the fixed turret
• Identify the equipment used in subsea production systems
• Describe subsea well systems
• Explain the functions of subsea well systems
• Explain the purpose of flowlines
• Identify the two types of flowlines
• Explain the purpose of risers
• Explain the purpose of subsea manifold systems
• Define umbilicals
• Explain the purpose of umbilicals
• Describe the purpose of subsea control systems
• Identify the equipment used in export systems
• Explain the role of shuttle tankers in the offloading of oil
• Explain the Production and Offloading F Strategy
• Explain how emergency shutdown is achieved
• Identify the oil and gas processing facilities
• Explain the process of crude oil separation
• Explain the purpose of the produced water system
• Identify the five main functions of the Gas Process System
• Describe the gas compression process
• Describe the gas treatment process
• Describe the Enhanced Oil Recovery (EOR) process
• Identify the different utilities for oil and gas processing
• Describe the different utilities for oil and gas processing
• Identify the marine systems on FPSOs
• Describe the marine systems on FPSOs
• Explain how the LOADMASTER® software programs can assist with marine operations
• Explain the purpose of vessel classification
• Describe the legislation and guidelines for FPSOs
• Describe FPSO manpower skill requirements
• Explain FPSO manpower organisation
• Describe the roles and responsibilities of personnel in production operations
• Describe the roles and responsibilities of engineering onshore support
• Describe logistical support