أساسيات الهندسة الإنشائية البحرية: دليل محترف للمهندسين

Duration: 5 Days

Language: ar

Course Code: IND04-130

Objective

:Upon completing this course, participants will be able to

- .Understand the fundamentals of offshore structural engineering and design principles
- .Perform load analyses considering wave, wind, and operational forces
- .Evaluate the structural integrity of offshore installations
- .Apply safety standards and regulatory requirements to engineering designs
- .Incorporate sustainability and risk management practices into offshore projects

Audience

:This course is ideal for

- .Structural and civil engineers seeking to transition into offshore engineering
- .Marine and offshore project managers involved in infrastructure development
- .Design and analysis professionals working in the energy or maritime sectors
- .Safety officers and compliance managers in the offshore industry
- .Engineers looking to enhance their knowledge of structural design in marine environments

Training Methodology

This course adopts a balanced approach, combining theoretical instruction with practical application to maximise learning outcomes. Participants will engage in lectures that cover core concepts of structural mechanics and marine load analysis, providing a strong foundation in the subject. Real-world examples of offshore structural design and failures will be explored through case studies, offering valuable insights into practical challenges and solutions. Hands-on workshops will focus on critical tasks such as load distribution, structural calculations, and material selection, ensuring participants can apply their knowledge effectively. Regular assessments will be conducted throughout the course to reinforce learning and ensure mastery of .essential concepts

Summary

This course provides a comprehensive introduction to offshore structural engineering, focusing on load analysis, structural design, and safety considerations within marine environments. Participants will gain a foundational understanding of the principles that underpin the design and maintenance of offshore structures, including platforms, subsea installations, and marine infrastructure. The course emphasises practical applications, enabling participants to assess structural integrity, perform load calculations, and incorporate safety standards into engineering .designs

Course Content & Outline

Section 1: Fundamentals of Offshore Structural Engineering

- Introduction to offshore structures: Overview of key types of offshore installations, .including fixed platforms, floating structures, and subsea systems
- Marine environment factors: Explore environmental forces such as wave loads, wind loads, .and currents, and their impact on offshore structures
- Structural mechanics basics: Review foundational principles of stress, strain, and material

.behaviour in marine conditions

Section 2: Load Analysis in Offshore Structures

- Wave and hydrodynamic forces: Understand the impact of wave-induced forces on .structural stability and integrity
- Wind and operational loads: Learn to calculate wind pressures and equipment-induced .forces on offshore structures
- Load combination methods: Explore techniques for combining different load scenarios for .robust structural design

Section 3: Structural Design Principles and Material Selection

- Structural design methodologies: Study approaches for designing safe and efficient .(offshore structures, including finite element analysis (FEA
- Material selection: Discuss corrosion resistance, fatigue properties, and material suitability .for marine environments
- Workshop: Design a basic offshore structure, considering load distribution and material .properties

Section 4: Safety Considerations and Compliance

- Safety standards and regulations: Overview of international standards, including ISO 19900 .and API RP 2A-WSD
- Risk management in offshore engineering: Identify potential risks and implement strategies .to mitigate them
- Case studies: Review incidents and successes in offshore structural engineering to extract .best practices

Certificate Description

عند إتمام هذه الدورة التدريبية بنجاح، سيحصل المشاركون على شهادة إتمام التدريب من Holistique Training. وبالنسبة للذين يحضرون ويكملون الدورة التدريبية عبر الإنترنت، سيتم تزويدهم بشهادة إلكترونية (e-Certificate) من Holistique Training.

وخدمة اعتماد التطوير المهني (BAC) معتمدة من المجلس البريطاني للتقييم Holistique Training شهادات المستمر (CPD)، كما أنها معتمدة وفق معايير ISO 9001 وISO 21001 وISO 29993.

لهذه الدورة من خلال شهاداتنا، وستظهر هذه النقاط على شهادة إتمام (CPD) يتم منح نقاط التطوير المهني المستمر واحدة عن كل ساعة CPD يتم منح نقطة CPD، ووفقًا لمعايير خدمة اعتماد Holistique Training. التدريب من لأي دورة واحدة نقدمها حاليًا CPD حضور في الدورة. ويمكن المطالبة بحد أقصى قدره 50 نقطة.

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