



PB INSTITUTE OF RESEARCH AND TECHNOLOGY

P.O Box 21457-00100

Nairobi - Kenya

Mobile: +254 721 214 795

Email: info@pebblesinstitute.org

Artificial Lift Systems Optimization Training Course

Duration: 10 days

On-Site

01 Who Should Attend

- This course is ideal for:
- Production Engineers
- Operations Managers
- Field Technicians
- Reservoir Engineers
- Completion Engineers
- Project Managers
- Technical Specialists

02 About the Course

Maximize production efficiency and extend well lifespan with our specialized Artificial Lift Systems Optimization Training Course. This program is designed to equip you with the essential skills to select, design, and optimize artificial lift systems, ensuring enhanced production and cost-effectiveness. In today's challenging production environments, mastering artificial lift optimization is crucial for organizations seeking to maximize asset value and minimize operational costs. Our artificial lift training course provides hands-on experience and expert guidance, empowering you to apply cutting-edge techniques for practical, real-world applications.

This artificial lift systems optimization training delves into the core concepts of various artificial lift methods, performance analysis, and troubleshooting, covering topics such as ESP, gas lift, rod pump, and progressive cavity pump systems. You'll gain expertise in using industry-standard tools and techniques to artificial lift systems optimization, meeting the demands of modern production operations. Whether you're a production engineer, operations manager, or field technician, this Artificial Lift Systems Optimization course will empower you to drive strategic production decisions and optimize well performance.



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03 Workshop Objectives

- Understand the fundamentals of asset integrity and reliability engineering.
- Master risk-based inspection (RBI) and reliability-centered maintenance (RCM) techniques.
- Utilize failure modes and effects analysis (FMEA) and root cause analysis (RCA).
- Implement corrosion management and prevention strategies.
- Design and build robust asset integrity management systems.
- Optimize predictive maintenance and condition monitoring.

04 Module Topics

Module 1: Introduction to Asset Integrity and Reliability

- Fundamentals of asset integrity and reliability engineering.
- Overview of asset integrity and reliability principles.
- Setting up an asset integrity management framework.
- Introduction to asset integrity tools and methodologies.
- Best practices for asset integrity.

Module 2: Risk-Based Inspection (RBI) and RCM

- Mastering risk-based inspection (RBI) and reliability-centered maintenance (RCM) techniques.
- Utilizing risk assessment and consequence analysis.
- Implementing RCM analysis and maintenance planning.
- Designing and building RBI and RCM programs.
- Best practices for RBI and RCM.

Module 3: Failure Modes and Effects Analysis (FMEA) and RCA



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- Utilizing failure modes and effects analysis (FMEA) and root cause analysis (RCA).
- Implementing FMEA for risk identification and mitigation.
- Utilizing RCA for incident investigation and prevention.
- Designing and building FMEA and RCA workflows.
- Best practices for failure analysis.

Module 4: Corrosion Management and Prevention

- Implementing corrosion management and prevention strategies.
- Utilizing cathodic protection and chemical inhibition.
- Implementing coating inspection and maintenance.
- Designing and building corrosion control programs.
- Best practices for corrosion management.

Module 5: Integrity Management Systems

- Designing and build robust asset integrity management systems.
- Utilizing data management and reporting.
- Implementing integrity assessment and planning.
- Designing and building integrity management plans.
- Best practices for integrity systems.

Module 6: Predictive Maintenance and Monitoring

- Optimizing predictive maintenance and condition monitoring.
- Utilizing vibration analysis and thermal imaging.
- Implementing sensor data analysis and machine learning.
- Designing and building predictive maintenance systems.
- Best practices for predictive maintenance.

Module 7: Troubleshooting Integrity Challenges



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- ▶ Troubleshooting and addressing common challenges in asset integrity and reliability.
- ▶ Analyzing inspection data and failure data.
- ▶ Utilizing problem-solving techniques for resolution.
- ▶ Resolving common integrity management errors.
- ▶ Best practices for troubleshooting.

Module 8: Regulatory Compliance and Safety

- ▶ Implementing regulatory compliance and safety standards.
- ▶ Utilizing industry codes and standards.
- ▶ Implementing safety management systems and audits.
- ▶ Designing and building compliance programs.
- ▶ Best practices for compliance.

Module 9: Integration with Operational Planning

- ▶ Integrating asset integrity and reliability with operational planning.
- ▶ Utilizing maintenance planning and scheduling.
- ▶ Implementing real-time monitoring and reporting.
- ▶ Designing and building integrated integrity systems.
- ▶ Best practices for integration.

Module 10: Large-Scale Integrity Projects

- ▶ Understanding how to manage large-scale asset integrity projects.
- ▶ Utilizing project management tools and techniques.
- ▶ Implementing program evaluation and reporting.
- ▶ Designing scalable integrity solutions.
- ▶ Best practices for project management.

Module 11: Emerging Integrity Technologies



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- Exploring emerging technologies in asset integrity (digital twins, AI for reliability).
- Utilizing digital twins for asset simulation and modeling.
- Implementing AI and machine learning for predictive maintenance.
- Designing and building advanced integrity systems.
- Optimizing advanced applications for specific use cases.
- Best practices for advanced applications.

Module 12: Real-World Integrity Use Cases

- Applying real world use cases for asset integrity and reliability in various industrial settings.
- Utilizing integrity management in oil and gas facilities.
- Implementing integrity management in chemical plants.
- Utilizing integrity management in power generation.
- Implementing integrity management in infrastructure projects.
- Best practices for real-world applications.

Module 13: Integrity Tools Implementation

- Leveraging asset integrity tools and frameworks for efficient implementation.
- Utilizing integrity management software and databases.
- Implementing risk assessment and inspection tools.
- Designing and building automated integrity workflows.
- Best practices for tool implementation.

Module 14: Monitoring and Metrics

- Implementing asset integrity project monitoring and metrics.
- Utilizing integrity performance indicators and KPIs.
- Designing and building monitoring systems for integrity projects.
- Optimizing monitoring for real-time insights.
- Best practices for monitoring.

Module 15: Future Trends in Asset Integrity

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- ▶ Emerging trends in asset integrity technologies and applications.
 - ▶ Utilizing autonomous inspection and repair systems.
 - ▶ Implementing advanced sensor and monitoring systems.
 - ▶ Best practices for future integrity management.