AFT Impulse Training: Water Hammer and Surge Analysis Techniques

24 - 28 Mar 2025
Paris

AGILE LEADERS
Training Center

AFT Impulse Training: Water Hammer and Surge Analysis Techniques

Ref.: 36224_255829 **Date:** 24 - 28 Mar 2025 **Location:** Paris **Fees:** 4800 **Euro**

AFT Impulse Training: Water Hammer and Surge Analysis Techniques Overview:

AFT Impulse Training: Water Hammer and Surge Analysis Techniques is a comprehensive course designed to empower engineers with the skills needed to master the AFT Impulse software and tackle complex hydraulic transient issues in various piping systems. This course provides an in-depth look at water hammer analysis, surge analysis techniques, and hydraulic transients in piping systems, utilizing real-world scenarios from industrial applications like cooling water systems, fire protection systems, and water supply and distribution networks. Participants will learn about transient analysis and cavitation, piping system design and analysis, and hydraulic modeling and simulation, all tailored to enhance safety, efficiency, and innovation in their engineering projects. By integrating these components, the course not only enhances practical knowledge but also aligns with the latest industry standards and technological advancements.

Target Audience:

- Mechanical Engineers
- Process Engineers
- Design Engineers specializing in hydraulics
- Safety Engineers in industrial settings
- Maintenance and Reliability Engineers

Targeted Organizational Departments:

- Engineering
- Maintenance
- Safety and Compliance
- Research and Development

Targeted Industries:

- Oil and Gas
- Manufacturing
- Utilities
- Chemical Processing
- Governmental Entities

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Course Offerings:

By the end of this course, participants will be able to:

- Conduct detailed water hammer and surge analysis using AFT Impulse.
- Design robust piping systems with advanced understanding of hydraulic transients.
- Implement surge mitigation strategies effectively.
- Utilize hydraulic modeling and simulation to predict system behaviors and optimize designs.
- Address transient analysis and cavitation in industrial applications.

Training Methodology:

This course employs a blend of theoretical instruction and practical application through case studies. Participants will engage in hands-on tasks that mirror real-world challenges, enhancing their problem-solving skills and understanding of complex fluid dynamics. Interactive sessions allow for immediate feedback and iterative learning, ensuring a deep comprehension of surge analysis techniques and their implementation in industrial settings.

Course Toolbox:

- Course Workbook and Reference Materials
- Hydraulic Transients Analysis Templates
- Surge Analysis and Mitigation Checklists
- Access to Online Resource Portal
- Simulation Exercises and Case Study Materials

Course Agenda:

Day 1: Foundations of Hydraulic Transients

- **Topic 1:** Introduction to Water Hammer and Surge Analysis
- **Topic 2:** Basics of AFT Impulse
- **Topic 3:** Hydraulic Transients in Piping Systems - Basics
- **Topic 4:** Design Principles for Piping System Design and Analysis
- **Reflection & Review:** Overview of key concepts and Q&A

Day 2: Advanced Analysis Techniques

- **Topic 1:** Intermediate Hydraulic Modeling and Simulation
- **Topic 2:** Surge Mitigation Strategies - Basics
- **Topic 3:** Pump Startup and Trip Analysis - Basics
- **Topic 4:** Industrial Applications of Surge Analysis - Cooling Systems
- **Reflection & Review:** Case studies and hands-on practice review

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Day 3: Application and Mitigation

- **Topic 1:** Fire Protection Systems Hydraulic Analysis
- **Topic 2:** Water Supply and Distribution Analysis
- **Topic 3:** Advanced Surge Mitigation Techniques
- **Topic 4:** Transient Analysis and Cavitation - Intermediate
- **Reflection & Review:** Practical applications and mitigation measures

Day 4: Special Topics in Surge Analysis

- **Topic 1:** Transient Pumps and Check Valves - Advanced Techniques
- **Topic 2:** Pipes and Junction Analysis - Advanced
- **Topic 3:** Impulse Assumptions and Boundary Conditions
- **Topic 4:** Cooling Water Systems Surge Analysis - Advanced
- **Reflection & Review:** Integration of day's learnings with real-world scenarios

Day 5: Mastery and Troubleshooting

- **Topic 1:** Troubleshooting Impulse Models
- **Topic 2:** Transient Forces - Advanced Applications
- **Topic 3:** Impulse Add on Modules PFA & SSL
- **Topic 4:** Review of Surge Tanks and Gas Accumulators
- **Reflection & Review:** Comprehensive review and feedback session

How This Course is Different from Other AFT Impulse Training Courses:

AFT Impulse Training: Water Hammer and Surge Analysis Techniques stands out due to its comprehensive coverage of both fundamental and advanced topics tailored to industrial applications. Unlike other courses, it provides extensive hands-on training with simulation tools and real case studies, ensuring that participants not only learn the theory but also apply it practically. The integration of latest software updates and industry-specific scenarios makes this course uniquely beneficial for professionals looking to excel in the field of hydraulic engineering.

WHO WE ARE

Agile Leaders is a renowned training center with a team of experienced experts in vocational training and development. With 20 years of industry experience, we are committed to helping executives and managers replace traditional practices with more effective and agile approaches.

OUR VISION

We aspire to be the top choice training provider for organizations seeking to embrace agile business practices. As we progress towards our vision, our focus becomes increasingly customer-centric and agile.

OUR MISSION

We are dedicated to developing value-adding, customer-centric agile training courses that deliver a clear return on investment. Guided by our core agile values, we ensure our training is actionable and impactful.

WHAT DO WE OFFER

At Agile Leaders, we offer agile, bite-sized training courses that provide a real-life return on investment. Our courses focus on enhancing knowledge, improving skills, and changing attitudes. We achieve this through engaging and interactive training techniques, including Q&As, live discussions, games, and puzzles.

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Gamified and Interactive Training

We understand that training delivery can be challenging, both online and offline. To ensure engagement and achieve learning objectives, we have developed our own activities and collaborated with industry-leading solutions to gamify our training sessions. This approach increases interaction levels and guarantees effective learning outcomes.

Our Training Cate gories

We cover a wide range of training categories to cater to different needs and interests

Branding, Marketing, Customer Relations, & Sales Programs
Finance and Accounting Programs
Human Resources Management Programs
Management & Leadership Programs
Political & Public Relations Programs
Project Management Programs
Quality & Process Management
Self-Development Programs

Join Agile Leaders today and embark on a transformative journey towards becoming a more agile and effective leader. Experience our customer-centric approach, actionable training, and guaranteed return on investment. Let us help you unleash your full potential in the dynamic business landscape.

Where to Find Us

You can join our training programs at our centers located in

We also offer online training sessions through the Zoom platform.

Malaysia Kuala Lumpur
Morocco Casablanca
Spain Barcelona
France Paris
UK London
Italy Rome
Egypt Cairo, Sharm El-Sheikh
Turkey Istanbul
Georgia Tbilisi
Azerbaijan Baku
UAE Dubai

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