



# تدريب Impulse AFT: تقنيات تحليل المطرفة الهائية والتهور



## تدريب AFT Impulse: تقنيات تحليل الرطقة الهائية والتور

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### 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

## 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

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

### Day 2: Advanced Analysis Techniques

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

### Day 3: Application and Mitigation

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

### Day 4: Special Topics in Surge Analysis

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

### Day 5: Mastery and Troubleshooting

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

## 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.



## فئات الدورات التدريبية



HR TRAINING & DEVELOPMENT

دورات إدارة و تطوير الموارد البشرية



دورات إدارة و تحليل البيانات ودورات علم البيانات



دورات إدارة الجودة وتطوير العمليات



الدورات التدريبية في مجال البيئة والاستدامة



دورات التسويق وإدارة علاقات العملاء وإدارة المبيعات



دورات التدريب القانوني والمشتريات والتعاقدات



دورات الاتصال الجماهيري و السياسات والعلاقات العامة



دورات النظم السيبراني ودورات تقنية المعلومات



دورات الصيانة ودورات المجالات الهندسية المتنوعة



دورات الصحة والسلامة والأمن المهني



دورات السكرتارية و إدارة المكاتب



دورات الحوكمة وإدارة المخاطر والامتثال



## فئات الدورات التدريبية



دورات معتمدة بشهادة CPD



دورات في مجالات القيادة والإدارة



دورات المهارات الشخصية وتطوير الذات



دورات المحاسبة و التمويل و دورات الإدارة  
الهائية



دورات مكتب إدارة المشاريع وإدارة المشاريع  
الرشيقة



دورات معتمدة من قبل هيئات دولية

## مدن التدريب



اسطنبول - تركيا



أمستردام - هولندا



أنقرة - تركيا



أثينا - اليونان



الرياض - المملكة العربية السعودية



الدوحة - قطر



الدار البيضاء - المغرب



الجبيل - المملكة العربية السعودية



باريس - فرنسا



المنامة - مملكة البحرين



الكويت - الكويت



القاهرة - مصر



براغ - جمهورية التشيك



بانكوك - تايلاند



بالي - جمهورية إندونيسيا



باكو - أذربيجان

## مدن التدريب



جاكرتا - جمهورية اندونيسيا



تيليسي - جورجيا



بوكيت - تايلاند



برشلونة - اسبانيا



روما - ايطاليا



دبي - الامارات العربية المتحدة



جوهانسبرغ - جنوب افريقيا



جنيف - سويسرا



شهر الشيخ - مصر



سيول - كوريا الجنوبية



سان دييغو - الولايات المتحدة  
الامريكية



زنبار - تنزانيا



طوكيو - اليابان



طشقند - اوزبكستان



طرابزون - تركيا



شيكاغو - الولايات المتحدة  
الامريكية

## مدن التدريب



كوالالمبور - ماليزيا



فيينا - النمسا



عن بعد - منصة زووم



عمان - المملكة الأردنية الهاشمية



ماربيا - اسبانيا



لندن - المملكة المتحدة



لانكاوي - ماليزيا



كيب تاون - جنوب إفريقيا



ميلان - إيطاليا



مونترنو - سويسرا



مسقط - سلطنة عمان



مدريد - إسبانيا



نيس - فرنسا



نيروبي - كينيا



ميونخ - ألمانيا

# 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.



**AGILE LEADERS**  
Training Center

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