

## COURSE OVERVIEW ME0389 Pipe Stress Analysis CAESAR II Static

### Course Title

Pipe Stress Analysis CAESAR II Static

### Course Date/Venue

December 22-26, 2024/Crowne Meeting Room, Crowne Plaza Al Khobar, Al Khobar, KSA

### Course Reference

ME0389

### Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



### Course Description



***This practical and highly-interactive course includes practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.***

This course is designed to provide participants with a detailed and up-to-date overview of Pipe Stress Analysis CAESAR II Static. It covers the necessity, governing principles, and key terms of pipe stress analysis; the software interface and basic functions of CAESAR II; the input of a piping system into CAESAR II; and the basic system.

During this interactive course, participants will learn the static analysis theory including the primary and secondary loads and sustained and occasional loads; developing load cases and identify how to set up and solve various load cases for static analysis; checking for errors and creating reports using CAESAR II; the sustained load and expansion loads and their implications and design to accommodate these loads; using the software to perform sustained and expansion load analysis; the seismic analysis, wind loading, or dynamics; the common issues and how to resolve them; and the best practices in pipe stress analysis.

## Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain an in-depth knowledge on CAESAR II static pipe stress analysis
- Discuss the necessity, governing principles, and key terms of pipe stress analysis
- Explore the software interface and basic functions of CAESAR II
- Input a piping system into CAESAR II and create a basic system
- Discuss the static analysis theory including the primary and secondary loads and sustained and occasional loads
- Develop load cases and identify how to set up and solve various load cases for static analysis
- Check for errors and create reports using CAESAR II
- Recognize sustained loads and expansion loads including their implications and design to accommodate these loads
- Use the software to perform sustained and expansion load analysis
- Discuss seismic analysis, wind loading, or dynamics
- Identify the common issues and how to resolve them and apply best practices in pipe stress analysis

## Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.

## Who Should Attend

This course provides an overview of all significant aspects and considerations of CAESAR II static pipe stress analysis for mechanical/design engineers, piping vessel maintenance engineers, engineering managers, piping designers, plant managers, draftsmen and those who are involved with piping in the petroleum, chemical, power, gas transmission and related industries.

## Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos


In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

### Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

### Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -


- 

The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units (CEUs)** in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

- 

British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

### Course Fee

**US\$ 5,500** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

### Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.





### Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



**Mr. Steve Magalios**, CEng, PGDip (on-going), MSc, BSc, is a **Senior Mechanical & Maintenance Engineer** with almost **40 years** of extensive **On-shore/Offshore** experience in the **Oil & Gas, Construction, Refinery** and **Petrochemical** industries. His expertise widely covers in the areas of **CAESAR II Pipe Stress Analysis, Auto Pipe Software, Dynamic & Static Analysis, Pipe Modeling & Modal Analysis, Mechanical Vibration Analysis, Expansion Joints Design & Analysis, Impact Load Analysis, Piping Systems, Preventive & Predictive Maintenance, Reliability Centered Maintenance, Applied Maintenance Management, Reliability Modelling, Reliability Techniques, Reliability Design Techniques, Advanced Root Causes Analysis & Techniques, Reliability Management, Pipeline Hot Tapping, Hot Tapping Equipment, Hot Tapping Operation, Boiler Inspection & Maintenance, Boiler Systems, Boiler instrumentation & Controls, Boiler Start-up & Shutdown, Boiler Operation & Steam System Management, Pipe Cuttings, Flange Bolt Tightening Sequence, Hydro Testing, Pump Technology, Fundamentals of Pumps, Pump Selection & Installation, Centrifugal Pumps & Troubleshooting, Reciprocating & Centrifugal Compressors, Screw Compressor, Compressor Control & Protection, Gas & Steam Turbines, Turbine Operations, Gas Turbine Technology, Valves, Process Control Valves, Bearings & Lubrication, Advanced Machinery Dynamics, Rubber Compounding, Elastomers, Thermoplastic, Industrial Rubber Products, Rubber Manufacturing Systems, Heat Transfer, Vulcanization Methods, Welding Engineering, Fabrication & Inspection, Welding Techniques, Practical Welding Technology, Welding Inspection, Welding & Machine Shop, Welding & Machining, Welding Types & Applications, Welding Safety, Welding Defects Analysis, TIG & Arc Welding, Shielded Metal Arc Welding, Gas Tungsten & Gas Metal Arc Welding, Welding Procedure Specifications & Qualifications (WPS & WPQ), Aluminium Welding, Safe Welding, International Welding Codes, Welding Procedure Specifications, Welding & Brazing, Welder Performance Qualification, Pipeline Operation & Maintenance, Pipeline Systems, Pipeline Design & Construction, Pipeline Repair Methods, Pipeline Engineering, Pipeline Integrity Management System (PIMS). Currently, he is the **Chartered Professional Surveyor Engineer & Urban-Regional Planner** wherein he is deeply involved in providing exact data, measurements and determining properly boundaries. He is also responsible in preparing and maintaining sketches, maps, reports and legal description of surveys.**

During his career, Mr. Magalios has gained his expertise and thorough practical experience through challenging positions such as a **Project Site Construction Manager, Supervision Head/Construction Manager, Construction Site Manager, Project Manager, Deputy PMS Manager, Head of the Public Project Inspection Field Team, Technical Consultant, Senior Consultant, Consultant/Lecturer, Construction Team Leader, Lead Pipeline Engineer, Project Construction Lead Supervising Engineer, Lead Site Engineer, Senior Site Engineer Lead Engineer, Senior Site Engineer, Mechanical Engineer, R.O.W. Coordinator, Site Representative, Supervision Head, Contractor, Client Site Representative** and Acting Client Site Representative for international Companies such as the Public Gas Corporation, Penspen International Limited, Eptista Servicios de Ingenieria S.I., J/V ILF Pantec TH. Papaioannou & Co. – Emenergy Engineering, J/V Karaylannis S.A. – Intracom Constructions S.A., Ergaz Ltd., Alkyonis 7, Palaeo Faliro, Piraeus, Elpet Valkaniki S.A., Asprofos S.A., J/V Depa S.A. just to name a few.

Mr. Magalios is a **Registered Chartered Engineer** and has **Master** and **Bachelor** degrees in **Surveying Engineering** from the **University of New Brunswick, Canada** and the **National Technical University of Athens, Greece**, respectively. Further, he is currently enrolled for **Post-graduate** in **Quality Assurance** from the **Hellenic Open University, Greece**. He has further obtained a **Level 4B** Certificates in **Project Management** from the **National & Kapodistrian University of Athens, Greece** and **Environmental Auditing** from the **Environmental Auditors Registration Association (EARA)**. Moreover, he is a **Certified Instructor/Trainer**, a **Chartered Engineer** of **Technical Chamber of Greece** and has delivered numerous trainings, workshops, seminars, courses and conferences internationally.



**Course Program**

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

**Day 1: Sunday, 22<sup>nd</sup> of December 2024**

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	<b>PRE-TEST</b>
0830 – 0930	<b>Introduction to Pipe Stress Analysis: Understanding Why it's Necessary, the Governing Principles, &amp; Key Terms</b>
0930 – 0945	Break
0945 – 1100	<b>Overview of CAESAR II: Exploring the Software Interface &amp; Basic Functions</b>
1100 – 1215	<b>Inputting a Piping System into CAESAR II: Learn to Create a Basic System</b>
1215 – 1230	Break
1230 – 1420	<b>Static Analysis Theory: An Overview of Static Analysis, Why it's Necessary, &amp; What it Reveals About a Piping System</b>
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day One

**Day 2: Monday, 23<sup>rd</sup> of December 2024**

0730 – 0930	<b>Loads: Explanation of Primary &amp; Secondary Loads, Sustained &amp; Occasional Loads</b>
0930 – 0945	Break
0945 – 1100	<b>Developing Load Cases: How to Set Up &amp; Solve Various Load Cases for Static Analysis</b>
1100 – 1215	<b>Practical Exercises: Participants will have Hands-on Experience Developing Load Cases</b>
1215 – 1230	Break
1230 – 1420	<b>Error Checking &amp; Report Generation: Learn to Check for Errors &amp; Create Reports using CAESAR II</b>
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day Two

**Day 3: Tuesday, 24<sup>th</sup> of December 2024**

0730 – 0930	<b>Understanding Sustained Loads: Deep Dive into Sustained Loads, their Implications &amp; How to Design to Accommodate these Loads</b>
0930 – 0945	Break
0945 – 1100	<b>CAESAR II for Sustained Loads: How to Use the Software to Perform Sustained Load Analysis</b>
1100 – 1215	<b>Practical Exercises: Participants will have Hands-on Experience Performing Sustained Load Analysis</b>
1215 – 1230	Break
1230 – 1420	<b>Review of Day's Concepts: Review &amp; Discussion of the Day's Learnings</b>
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day Three

**Day 4: Wednesday, 25<sup>th</sup> of December 2024**

0730 – 0930	<b>Expansion Loads: Deep Dive into Expansion Loads, their Implications, &amp; How to Design to Accommodate these Loads</b>
0930 – 0945	Break
0945 – 1100	<b>CAESAR II for Expansion Loads: How to Use the Software to Perform Expansion Load Analysis</b>





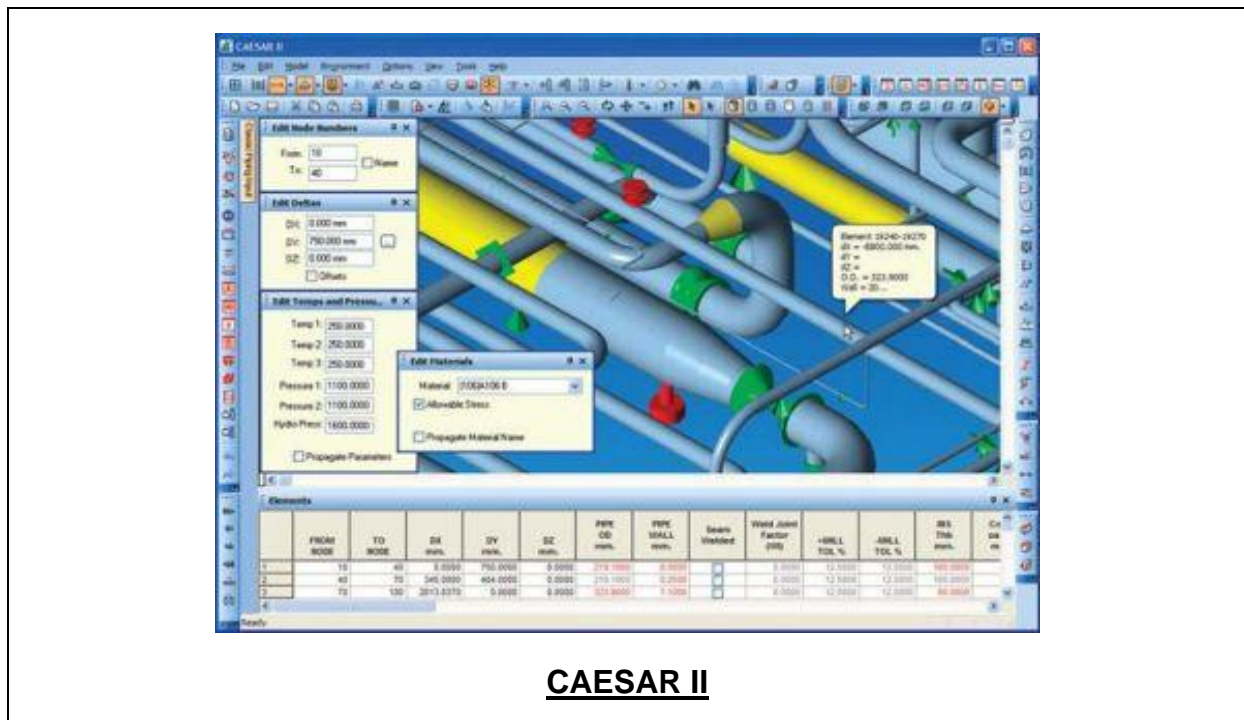
1100 – 1215	<b>Practical Exercises:</b> Participants will have Hands-on Experience Performing Expansion Load Analysis
1215 – 1230	Break
1230 – 1420	<b>Review of Day's Concepts:</b> Review & Discussion of the Day's Learnings
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day Four

**Day 5: Thursday, 26<sup>th</sup> of December 2024**

0730 – 0930	<b>Advanced Topics:</b> Cover Any Additional Topics such as Seismic Analysis, Wind Loading, or Dynamics (As per Course Objectives & Participant Interest)
0930 – 0945	Break
0945 – 1100	<b>Practical Exercise:</b> Participants will have a Hands-on Experience with these Advanced Topics
1100 – 1215	<b>Troubleshooting &amp; Best Practices:</b> Discuss Common Issues & How to Resolve them, Plus Tips for Best Practices in Pipe Stress Analysis
1215 – 1230	Break
1230 – 1345	<b>Course Wrap-up:</b> Review of the Week's Concepts, Open Forum for Remaining Questions, Feedback Session, & Next Steps for Further Learning
1345 – 1400	<b>Course Conclusion</b>
1400 – 1415	<b>POST-TEST</b>
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course

**Simulator (Hands-on Practical Sessions)**

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the state-of-the-art “CAESAR II Software”.



**Course Coordinator**

Mari Nakintu, Tel: +971 2 30 91 714, Email: [mari1@haward.org](mailto:mari1@haward.org)

