



COURSE OVERVIEW ME0389
Pipe Stress Analysis CAESAR II Static

Course Title

Pipe Stress Analysis CAESAR II Static

Course Date/Venue

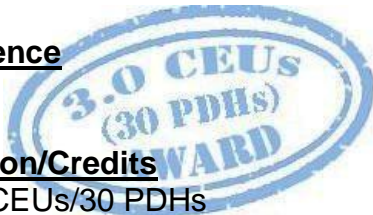
August 11-15, 2024/Al Khobar Meeting Room, Hilton Garden Inn, Al Khobar, KSA

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: -


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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.

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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. Dimitry Rovas, CEng, MSc, PMI-PMP, SMRP-CMRP is a **Senior Mechanical & Maintenance Engineer** with extensive industrial experience in **Oil, Gas, Power and Utilities** industries. His expertise includes **CAESAR II, Piping System CAESAR II, Sustained & Expansion Loads, Static & Dynamic Analysis, Piping Stress Analysis, Piping Vibration, Boiler Inspection & Maintenance, Boiler Systems, Boiler instrumentation & Controls, Boiler Start-up & Shutdown, Boiler Operation & Steam System Management, Boiler Water Chemistry & Treatment, Boiler Efficiency & Waste Heat Recovery, Boiler Inspection & Testing, Boiler Maintenance, Boiler Troubleshooting & Safety,**

Boiler Emissions & Pollution Control, Combustion Analysis & Tuning Procedures, Water Treatment Technology, Heat Recovery Steam Generating (HRSG), Impulse Tube Installation & Inspection, Parker Compression Fittings, Pipes & Fittings, PSV Inspection, Root Cause Failure Analysis, Tank Design & Engineering, Tank Shell, Tanks & Tank Farms, Vacuum Tanks, Gas Turbine Operating & Maintenance, Diesel Engine, Engine Cycles, Governors & Maintenance, Crankshafts & Maintenance, Lubrication System Troubleshooting & Maintenance, Engines/Drivers, Motor Failure Analysis & Testing, Motor Predictive Maintenance, Engine Construction & Maintenance, HP Fuel Pumps & Maintenance, Fired Equipment Maintenance, Combustion Techniques, Process Heaters, Glass Reinforced Epoxy (GRE), Glass Reinforced Pipes (GRP), Glass Reinforced Vent (GRV), Mechanical Pipe Fittings, Flange Joint Assembly, Adhesive Bond Lamination, Butt Jointing, Joint & Spool Production, Isometric Drawings, Flange Assembly Method, Fabrication & Jointing, Jointing & Spool Fabrication, CAESAR, Pipe Stress Analysis, 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, Process Plant Shutdown & Turnaround, Professional Maintenance Planner, Advanced Maintenance Management, Maintenance Optimization & Best Practices, Maintenance Auditing & Benchmarking, Material Cataloguing, Reliability Management, Rotating Equipment, Energy Conservation, Energy Loss Management in Electricity Distribution Systems, Energy Saving, Thermal Power Plant Management, Thermal Power Plant Operation & Maintenance, Heat Transfer, Machine Design, Fluid Mechanics, Heating & Cooling Systems, Heat Insulation Systems, Heat Exchanger & Cooling Towers, Mechanical Erection, Heavy Rotating Equipment, Material Unloading & Storage, Commissioning & Start-Up. He is currently the **Project Manager wherein he is managing, directing and controlling all activities and functions associated with the domestic heating/cooling facilities projects.**

During his life career, Mr. Rovas has gained his practical and field experience through his various significant positions and dedication as the **EPC Project Manager, Field Engineer, Mechanical Engineer, Preventive Maintenance Engineer, Researcher, Instructor/Trainer, Telecom Consultant and Consultant** from various companies such as the Podaras Engineering Studies, Metka and Diadikasia, S.A., **Hellenic Petroleum Oil Refinery** and COSMOTE.

Mr. Rovas has **Master's** degrees in **Energy Production & Management** and **Mechanical Engineering** from the **National Technical University of Athens (NTUA), Greece**. Further, he is a **Certified Instructor/Trainer**, a **Certified Maintenance and Reliability Professional (CMRP)** from the Society of Maintenance & Reliability Professionals (SMRP), **Certified Project Management Professional (PMI-PMP)**, **Certified Six Sigma Black Belt**, **Certified Internal Verifier/Assessor/Trainer** by the Institute of Leadership & Management (ILM), **Certified Construction Projects Contractor**, **Certified Energy Auditor** and a **Chartered Engineer**. Moreover, he is an active member of **American Society for Quality**, Project Management Institute (PMI), **Body of Certified Energy Auditors** and **Technical Chamber of Greece**. He has further received various recognition and awards and delivered numerous trainings, seminars, courses, workshops 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, 11th of August 2024

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

Day 2: Monday, 12th of August 2024

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

Day 3: Tuesday, 13th of August 2024

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

Day 4: Wednesday, 14th of August 2024

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





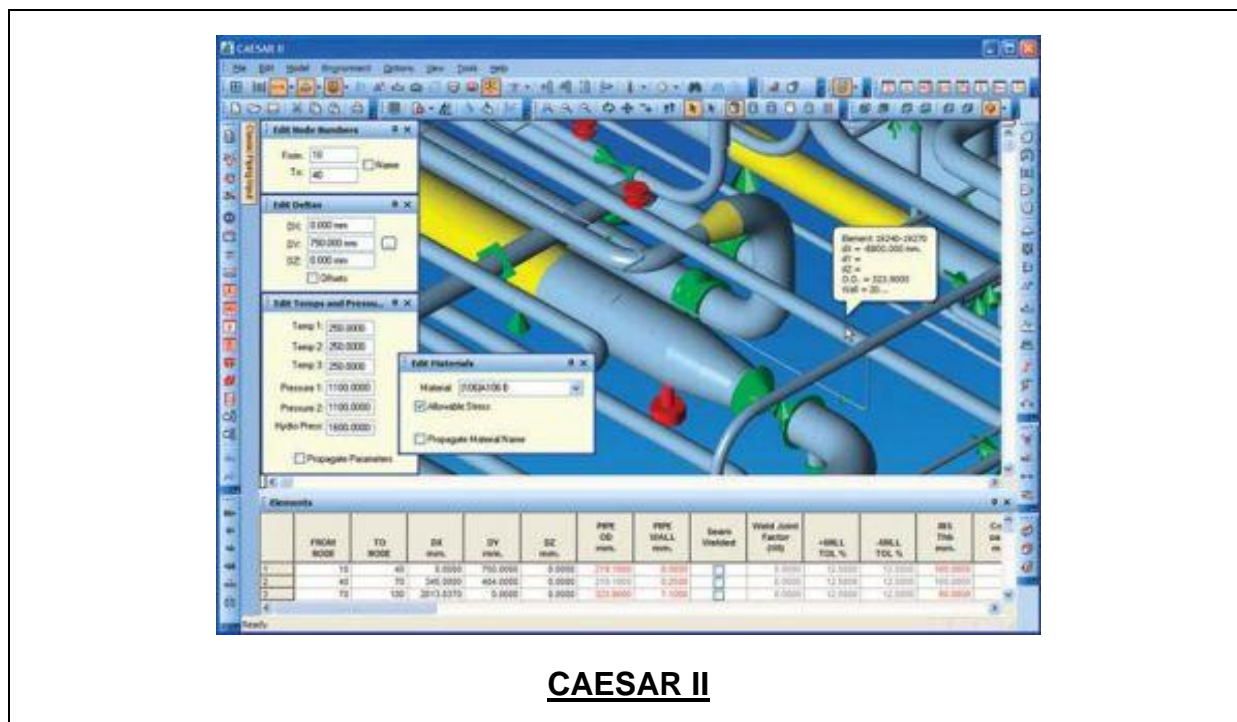
1100 – 1215	Practical Exercises: Participants will have Hands-on Experience Performing Expansion Load Analysis
1215 – 1230	Break
1230 – 1420	Review of Day's Concepts: Review & Discussion of the Day's Learnings
1420 – 1430	Recap
1430	Lunch & End of Day Four

Day 5: Thursday, 15th of August 2024

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

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