COURSE OVERVIEW OE0170

Introduction to Offshore Structural Analysis and the Use of SACS

Course Title
Introduction to Offshore Structural Analysis and the Use of SACS

Course Date/Venue
Session 1: August 17-21, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
Session 2: December 22-26, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Course Reference
OE0170

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Description

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

SACS is an integrated suite of software that supports the analysis, design and fabrication of offshore structures and will discuss the fundamentals behind offshore structures with the overall objective to provide participants with an understanding of the design and construction of offshore structure using Structural Analysis Computer System (SACS®) software. SACS is the most comprehensive design and analysis package offered to both the offshore and civil engineering industries.

This course will cover offshore platforms and nomenclature; the role of SACS® in their design and analysis; system capabilities and new features, system configuration; structural models with SACS® using the graphical interface; method of creating a new model using the wizard; process of defining geometry; input material properties; user-defined loading and input environmental loading from waves, wind, current; as well as API RP-2A 20th/21st edition considerations and the hydrostatic and hydrodynamic properties necessary to input in the model.

During this interactive course, participants will be able to describe the load combinations modeling and gain knowledge on code check parameters; identify the analysis options for SACS® and input soil data from the geotechnical report; generate soil data and capacity curve plots and create joint can input file; execute the linear static analysis; conduct beam and finite element stress checks and tubular connection punching shear check; review results, redesign interactively and learn the process of viewing soil graphs and plotting results; demonstrate the method of checking the SACS® model onscreen and examine the SACS® output; prepare and model piles, risers and appurtenances; explain the process of checking the SACS® model and entering the correct Ky/Kz or Ly/Lz properties for primary structural members; and provide alternative ways of entering soil data in PSI.

Course Objectives

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

- Apply an in-depth knowledge and skills in Offshore Structural Analysis Computer System (SACS®)

- Discuss offshore platforms and nomenclature and emphasize the role of SACS® in their design and analysis

- Determine the system capabilities and new features of SACS® and explain its system configuration

- Create structural models with SACS® using the graphical interface and demonstrate the method of creating a new model using the wizard

- Explain the process of defining geometry and demonstrate how to input material properties

- Describe user-defined loading and input environmental loading from waves, wind, current, etc.

- Recognize API RP-2A 20th/21st edition considerations and the hydrostatic & hydrodynamic properties necessary to input in the model

- Describe load combinations modeling and gain knowledge on code check parameters

- Identify the analysis options for SACS® and input soil data from the geotechnical report

- Generate soil data & capacity curve plots and create joint can input file

- Execute the linear static analysis and conduct beam and finite element stress checks and tubular connection punching shear check

- Review results and to redesign interactively and learn the process of viewing soil graphs & plotting results

- Demonstrate the method of checking the SACS® model onscreen and examine the SACS® output

- Prepare and model piles, risers & appurtenances and explain the process of checking the SACS® model & entering the correct Ky/Kz or Ly/Lz properties for primary structural members

- Provide alternative ways of entering soil data in PSI

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 offshore structural analysis computer system (SACS®) for offshore structural, architectural, mechanical and civil engineers and designers. The course will also benefit naval engineers and technologists.

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.
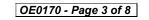
Course Fee

US$ 8,000 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 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: -

- **BAC** 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.

- **IACET** 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

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:
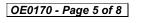
Mr. Sergey Kole, is a **Senior HSE Consultant** with over **25 years** of **onshore** and **offshore** experience within the **Oil & Gas**, **Petroleum** and **Refinery** industry. His expertise widely covers in the areas of **NEBOSH** HSE Certificate in Leadership Excellence, Process Safety Management, **Hazardous Materials** (**HAZMAT**), **Hazard Communication** (**HAZCOM**), **Hazard Recognition & Assessment**, **Risk Control**, **Cryogens**, **MSDS**, Liquified Natural Gas, **Hazard Monitoring** Techniques, **Environmental Pollution** Prevention, **Hazardous Classification**, Packaging & Labelling, **Chemical Transportation**, **Waste** Management, **Chemical Spill Clean Up**, **Risk** Assessments, Safety & Emergency Plans, Working at Heights, Firefighting, Rescue & Operation, Fall Protection, **HSSE Emergency Response & Crisis Management** Operations, **Confined Space Entry**, **Construction Health & Safety**, HSSE Principles & Practices, HSE Quantitative Risk Assessment (**QRA**), **Root Cause** Analysis & Techniques, **Hazardous Materials & Chemicals** Handling, **Chemical Spills**, Safety Precaution & Response Action Plan, **PSM**, **PHA**, **HAZOP**, **HAZID**, **Hazard & Risk Assessment**, Task Risk Assessment (**TRA**), **Incident Command**, **Accident & Incident** Investigation, **Emergency Response** Procedures, Job Safety Analysis (**JSA**), Behavioural Based Safety (**BBS**), **Work Permit & First Aid**, **Emergency Response**. Further, he is also well versed in **Anatomy of Shipping**, **Logistics & Transportation Planning** Methods, **Forecasting Logistics** Demands, Visual Network Model, **Logistics Operations**, **Tanker Vetting & Inspection**, **Marine Vetting & Audit Criteria Manual** for **Tank Ships**, **Marine & Ship Vetting**, **Vetting Process & Marine Safety Criteria**, **Tanker Vetting** for **Terminals**, **Ship Vetting**, **Marine Terminal** Operations & Management, **Marine Hazards** Prevention & Control, **Marine Communication** Systems, **Marine Safety**, **Ship** Management, **Oil Terminal** Planning, **Vessels** Operations, **Terminal** Management & Support Operations, **Oil Spill Contingency & Emergency Response Plan**, **Qualitative & Quantitative Risk** Assessments, **Terminal** Planning, **Oil Tanker Storage** Planning, **Cargo Transfer** Handling, Loading & Discharging, **Ballasting**, **Tank** Cleaning, **Crude Oil Washing**, **Ship** Handling, **Radar** Navigation, **Navigational** Aids, **Meteorological** Data Review, **Sea & Weather** Condition Monitoring, **ERT Vessel** Coordination and **Transport & Distribution Carrier**. Further, he is well-versed in **Sea-going** Personnel Human Resource Management, **Survival Craft & Rescue Boats**, Dynamic Positioning, Anti-Piracy Preparedness & Response, **Shipping** Maintenance System, **Oil & Chemical Tanker**, **Liquefied Gas Tanker**, **Inert Gas** System, **Crude Oil** Tanker & Gas Carrier, Offshore Logistics & Supply Management, **Marine Fleet** Management & Operations, **International Maritime Conventions & Codes**, **Marine Radar**, **Port Traffic Control** Systems & Instrumentation, H^2S Hazard Awareness, **Firefighting**, Medical Care Onboard, Carriage of Dangerous & Hazardous Substances and **Ballast Water & Sediment** Management.

During his career life, Mr. Sergey has gained his technical and marine expertise through various challenging key positions such as being the **Project Manager**, **Account Manager**, **Commercial Sales Manager**, **Manager**, **Sales Engineer**, **Project Specialist**, **Senior HR Consultant**, **Senior Lecturer**, **Senior Consultant/Trainer**, **Business Consultant**, **Captain**, **Operations Director**, **Project Manager**, **Port Supervisor**, **Master** of General Cargo Ship, **Master** of Container Ship, **Chief Officer**, **Marine Operations Specialist**, **Marine Coordinator**, **On-call Duty Officer**, **Crewing Consultant**, 2nd **Officer**, **Ship Chandler** and **Senior Instructor/Trainer** for several international companies such as **ZADCO**, **AMEC Foster Wheeler**, Fircroft Engineering Services, Ltd., Rusalina Yacht Company, Van Oord Offshore, Exxon Neftegaz Ltd (ENL), Jr Shipping, Carisbrooke Shipping, Unicorn Petrol ve Kimya, Q Shipping BV, m/v Tradeport, Miedema Shipping CV, Rah Management BV, Petrobulk Maritime Inc., Empross Lines Ship Management, Melcard Ltd., Aquarian Shell Marine Inc., Mercy Baaba and Square Ltd.

Mr. Sergey has a **Bachelor's** degree in **Navigation** in **Nautical Studies** from the **Kiev State Academy** of **Water Transport**, **Ukraine** and holds a **Master Mariner** (Unlimited) Certificates of Equivalent Competency from the MCA, UK and NSI, Netherlands. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**) and has delivered various trainings, courses, seminars, 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 workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	**PRE-TEST**
0830 – 0900	**Personnel Introductions & Software Installation**
0900 – 0930	**SACS Overview**
0930 – 0945	Break
0945 – 1030	**Offshore Platforms** Nomenclature
1030 – 1100	**Scope of Training & Training Strategy**
1100 – 1130	**System Capabilities & New Features**
1130 – 1215	**System Configuration**
1215 – 1230	Break
1230 – 1330	**Using the Graphical Interface**
1330 – 1420	**Questions & Answers**
1420 – 1430	**Recap**
1430	Lunch & End of Day One

Day 2

0730 – 0800	**Creating the Model Using Wizard**
0800 – 0830	**Defining Geometry & Material Properties**
0830 – 0930	**User-Defined Loading**
0930 – 0945	Break
0945 – 1030	**Environmental Loading of Wave, Wind, etc**
1030 – 1100	**API RP-2A 20th/21st Edition Considerations**
1100 – 1130	**Hydrostatic & Hydrodynamic Properties**
1130 – 1215	**Load Combinations Modelling**
1215 – 1230	Break
1230 – 1300	**Code Check Parameters**
1300 – 1330	**Analysis Options**
1330 – 1420	**Stage Assessment**
1420 – 1430	**Recap**
1430	Lunch & End of Day Two

Day 3

0730 – 0800	**Modelling & Generating API RP-2A 20th Soils**
0800 – 0830	**Generating Soil Data & Capacity Curve Plots**
0830 – 0930	**Creating the Joint can Input File**
0930 – 0945	Break
0945 – 1030	**Executing the Linear Static Analysis**
1030 – 1100	**Beam & Finite Element Check**
1100 – 1130	**Tubular Connection Punching Shear Check**
1130 – 1215	**Reviewing Results & Redesigning Interactively**

1215 – 1230	*Break*
1230 – 1300	***Questions & Answers***
1300 – 1330	***Viewing Soil Graphs & Plotting Results***
1330 – 1420	***Stage Assessment***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0830	***Checking the SACS Model on Screen***
0830 – 0930	***Examining the SACS Output***
0930 – 0945	*Break*
0945 – 1030	***Modelling Piles***
1030 – 1100	***Checking the SACS Model for & Entering the Correct Ky/Kz or Ly/Lz Properties for Primary Structural Members***
1100 – 1130	***Modelling Risers & Appurtenances***
1130 – 1215	***Questions & Answers***
1215 – 1230	*Break*
1230 – 1330	***Alternative Ways of Entering Soil Data in PSI***
1330 – 1420	***Stage Assessment***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

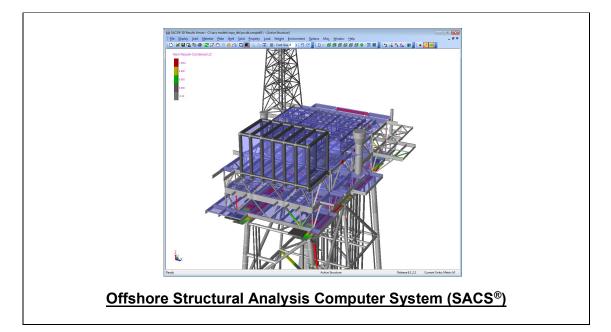| 0730 – 0930	***Knowledge Assessment***
0930 – 0945	*Break*
0945 – 1100	***Knowledge Assessment (cont'd)***
1100 – 1215	***Checking the Participants Work & Commenting on Difficulties Encountered***
1215 – 1230	*Break*
1230 – 1345	***Course Critique***
1345 – 1400	***Course Conclusion***
1400 – 1415	***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 "Offshore Structural Analysis Computer System (SACS®)" simulator.

Offshore Structural Analysis Computer System (SACS®)

Course Coordinator

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