# COURSE OVERVIEW OE0171
# Foundation Modeling Skills for Offshore Structures

**Course Title**

Foundation Modeling Skills for Offshore Structures


**Course Date/Venue**

Session 1: February 24-28, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Session 2: August 17-21, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE



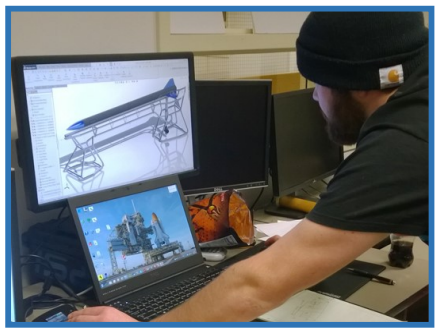
**Course Reference**

OE0171

**Course Duration/Credits**

Five days/2.5 CEUs/25 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.***

This course designed to provide participants with an advanced overview of SACS®. It covers the system capabilities and the new features of SACS including its system configuration; the structural models with SACS® using graphical interface; the method of creating a new model using the wizard and inputting the member properties; the user-defined loading; the input environmental loading from waves, wind, current, etc.; the load combinations; and the static inplace analysis based on the model that has been created.

During this interactive course, participants will learn the various factors to be considered for doing the inplace analysis; the boundary conditions of soil; the lift analysis of the jacket; the calculation of COG shift and sling forces from the lift analysis; the gap element concept for load out analysis; the various steps involved in the creation of the tow input file for generation of inertial acceleration loads; the dynamic analysis and fatigue analysis of the model that has been prepared; and the various aspects of dynamic and fatigue analysis including added mass, SCF, wave scatter data, cyclic stresses, etc.

## Course Objectives

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

- Apply and gain an advanced knowledge on Structural Analysis Computer System (SACS®)
- Determine the system capabilities and the new features of SACS and explain its system configuration
- Create structural models with SACS® using graphical interface and demonstrate the method of creating a new model using the wizard and inputting the member properties
- Recognize the user-defined loading and carryout input environmental loading from waves, wind, current, etc.
- Define the load combinations and perform static inplace analysis based on the model that has been created
- Identify various factors to be considered for doing the inplace analysis
- Discuss the boundary conditions of soil
- Perform lift analysis of the jacket as well as calculate the COG shift and sling forces from the lift analysis
- Discuss the gap element concept for load out analysis and carryout various steps involved in the creation of the tow input file for generation of inertial acceleration loads
- Perform dynamic analysis and fatigue analysis of the model that has been prepared
- Carryout various aspects of dynamic and fatigue analysis including added mass, SCF, wave scatter data, cyclic stresses, etc.

## 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 advanced 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.

**Course Certificate(s)**

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

**Certificate Accreditations**

Certificates are accredited by the following international accreditation organizations:-

- 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.

- 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. Dino Glavina**, MSc, is a **Senior Master Marine Engineer** with over **20 years** of extensive within the **Oil & Gas** and **Marine** industries. His expertise widely covers in the areas of **Offshore Marine** Operations, **Offshore Safety**, **Marine Environment Protection**, **Offshore Maintenance** Management, **Navigation**, **Ship** Operation & Control, **Cargo Handling Storage**, **Deck & Equipment** Maintenance, Global Maritime Distress and Safety System (**GMDSS**), Electronic Chart Display and Information System (**ECDIS**), **Vessel Audit & Inspection**, **Ballast Control** Operation, **Barge** Supervision**, Class & Statutory Surveys**, **Dry Docks** Overhauling & Major Repairs Planning, **Marine Units** Inspection & Assessment, **Mooring & Towing**, **Radio Operations**, **Automatic Radar Plotting Aid** Management, **Tanker Familiarization**, **Security** Awareness, **Seafarer** Designated Security, **Dynamic Positioning**, **Survival Craft & Rescue Boat Operations**, Further Offshore Emergency Training (**FOET**), Helicopter Underwater Escape Training (**HUET**), **Bridge Team** Management and **Bridge Resource** Management.

Mr. Glavina has gained his practical and field experience through his various significant positions and dedication as the **Marine & HSE Superintendent**, **Platform Manager**, **Barge Master**, **Captain**, **Towing Master**, **Unlimited Master License**, **Mooring Master**, **Offshore Marine Instructor**, Officer of the Watch (**OOW**) and **Senior Instructor/Trainer** from various companies such as the RST Global Solutions, African Offshore Services Ltd. and Oil Tanker & LNG Vessels.

Mr. Glavina has a **Master's** degree in **Maritime Engineering** (**Nautical Science & Maritime Safety**) from the **University of Rijeka**, **Croatia**. Further, he is a **Certified Instructor/Trainer** and holds a **Master of a Ship of 3000 GT Certificate** from the Standards of Training, Certification, and Watchkeeping **(STCW)** for **Seafarers**. He has delivered various trainings, seminars, conferences, workshops and courses globally.

## 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 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***

| | |
|---|---|
| *0730 – 0800* | *Registration & Coffee* |
| *0800 – 0815* | *Welcome & Introduction* |
| *0815 – 0830* | ***PRE-TEST*** |
| *0830 – 0930* | ***The System Capabilities & the New Features of SACS & its System Configuration***<br>*Introduction ● Fixed Platform Nomenclature ● Platform Concepts ● Analysis Techniques ● Codes & Standards ● SACS Software Modules* |
| *0930 – 0945* | *Break* |
| *0945 – 1100* | ***The System Capabilities & the New Features of SACS & its System Configuration (cont'd))***<br>*Module Arrangement ● Global Settings ● File Naming Convention ● Setting Up Project, Run Files, etc. ● Precede, Data Generator & Editor* |
| *1100 – 1230* | ***Creating the Model***<br>*Using Precede & Structural Wizard ● Members ● Wish Bones ● Main Piles ● Conductor Modeling* |
| *1230 - 1245* | *Break* |
| *1245 - 1420* | ***Creating the Model (cont'd)***<br>*Inputting Material Properties ● Plate Groups ● Local & Global Coordinate Systems* |
| *1420 – 1430* | ***Recap*** |
| *1430* | *Lunch & End of Day One* |

***Day 2***

| | |
|---|---|
| *0730 – 0930* | ***Defining the Design Parameters***<br>*Joint Connection Design ● Define Beam Offsets* |
| *0930 – 0945* | *Break* |
| *0945 – 1100* | ***Defining the Design Parameters (cont'd))***<br>*Define Member Code Check Properties* |
| *1145 - 1230* | ***Loading the Model***<br>*Dead Load ● Applied Loads – Joint & Member Loads ● Overrides (Member & Group) ● Simulation of Non-Structural Elements such as Anodes, Walkways, Stairs etc* |
| *1230 - 1245* | *Break* |
| *1245 - 1420* | ***Loading the Model (cont'd))***<br>*Loading the Structure (Using the Weight Feature): Surface Loads, Equipment Footprint Loads, Appurtenant Structure Loads, Inertia Loading* |
| *1420 – 1430* | ***Recap*** |
| *1430* | *Lunch & End of Day Two* |

**Day 3**

| | |
|---|---|
| 0730 – 0930 | ***Environmental Loading***<br>*Wind Area Definitions ● Wind Loads ● Wave & Current Loading ● Buoyancy Loads ● Marine growth* |
| 0930 – 0945 | *Break* |
| 0945 – 1100 | ***Environmental Loading (cont'd))***<br>*Hydrodynamic Coefficients ● Wave Kinematics & Current Blockage Factor ● Hydrostatic Collapse check* |
| 1145 - 1230 | ***Preparing for Analysis***<br>*Load Combinations ● Allowable Stress Modification Factor ● Unity Check Partition Table ● Code Check & Other Analysis Options ● Defining Boundary Conditions* |
| 1230 - 1245 | *Break* |
| 1245 - 1420 | ***Creating Joint Can Data File***<br>*Joint Check Options ● Joint Can File* |
| 1420 – 1430 | ***Recap*** |
| 1430 | *Lunch & End of Day Three* |

**Day 4**

| | |
|---|---|
| 0730 – 0930 | ***Analysis Results***<br>*Codes & Standards ● Analysis & Review of Results ● Interpretation of List Files ● PostVue Files ● Viewing Results in 3D ● Member Unity Checks & Unity Check Plots* |
| 0930 – 0945 | *Break* |
| 0945 – 1100 | ***Analysis Results (cont'd))***<br>*Member Review & Redesign ● Joint Design Review & Redesign ● Data Extraction & Report Preparation* |
| 1145 - 1230 | ***Creating PSI Data File***<br>*Soil Data Input ● Pile Design Parameters ● Super Element Simulation* |
| 1230 - 1245 | *Break* |
| 1245 - 1420 | ***Analysis Results***<br>*Analysis & Review of Results with PSI Files ● Performing the Lift Analysis of the Jacket and Calculation of COG Sling Forces from the Lift Analysis* |
| 1420 – 1430 | ***Recap*** |
| 1430 | *Lunch & End of Day Three* |

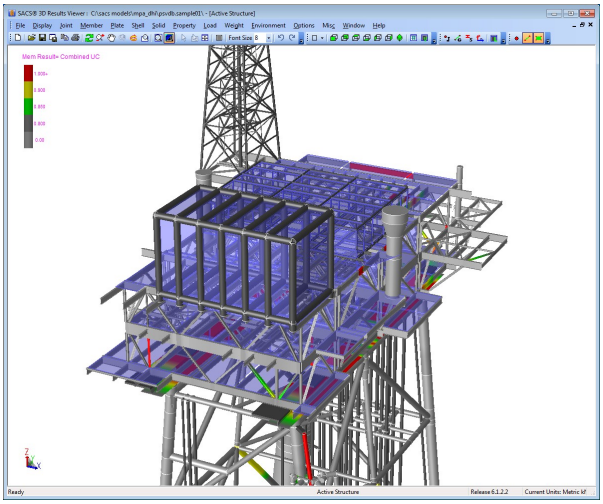
**Day 3**

| | |
|---|---|
| 0730 – 0930 | ***The Gap Element Concept for Load Out Analysis***<br>*The Various Steps Involved in the Creation of Tow Input File for Generation of Inertial Acceleration Loads ● Load Out Sequence* |
| 0930 - 0945 | *Break* |
| 0945 - 1100 | ***The Gap Element Concept for Load Out Analysis (cont'd)***<br>*Gap Element Concept ● Typical Motion Parameters ● Tow Input File ● Single Stage Method ● Two Stage Method ● Review of Results ● Discussions* |
| 1100 – 1230 | ***Introduction to Performing the Dynamic Analysis & Fatigue Analysis***<br>*The Various Aspects of Dynamic & Fatigue Analysis like Added Mass, SCF, Wave Scatter Data, Cyclic Stresses, etc. ● Super Element Simulation ● Mass Modeling ● Added Mass and Entrapped Fluid ● Dynamic Analysis ● Review of Results ● Wave Scatter Data ● Wave Load Specification ● SCF & S-N Curves ● Generation of Cyclic Stresses* |
| 1230 – 1245 | *Break* |

| | |
|---|---|
| *1245 – 1345* | ***Introduction to Performing the Dynamic Analysis & Fatigue Analysis (cont'd)***<br>*Generation of Cyclic Stresses ● Fatigue Damage Calculations ● Deterministic Analysis ● Spectral Representation of Sea State ● Wave Selection ● Transfer Function Generation ● Cyclic Stresses Generation ● Spectral Fatigue Analysis ● Review of Results* |
| *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**

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org