

Diploma in Naval Architecture and Offshore Engineering



Training on SACS, MOSES, Maxsurf and Staad Pro Software

ARYATECH MARINE & OFFSHORE SERVICES PVT LTD

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Bentley
Channel Partner

 *Aryatech*



Training in Naval Architecture and Offshore Engineering

Course Title

Naval Architecture and Offshore Engineering

Duration & Location

2 Months Training, New Delhi, India



Naval Architecture and Offshore Engineering

Training Methodology

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:-

- 20% Lectures
- 20% Workshops & Work Presentations
- 60% Case Studies & Practical Exercises using software

Schedule:

1. The training on the application and usage of the SACS, MOSES, Maxsurf and Staad Pro software.
2. The training will be carried out in 2 Months in New Delhi, India

Software Access:

1. Software (SACS, MOSES, Maxsurf and Staad Pro) access to each individual candidate will be provided by Aryatech Marine & Offshore.

Certificates:

1. Upon completion of training, certificates will be provided by Aryatech.

Placement:

After completion of the training program, Aryatech will provide the list of the companies with contact details who are using the SACS/MOSES/Maxsurf/ Staad Pro software in India and Middle East.

Training Fee:

Per candidate training fee is INR 85000 + Services Tax.

Accommodation

Accommodation will be provided by Aryatech free of cost.

Naval Architecture and Offshore Engineering

Naval Architecture and Offshore Engineering TRAINING SCHEDULE

| Week | Description |
|------------------|--|
| 1 Week | Staad Pro Training |
| 2 Week | SACS Training |
| 3 Week | MOSES Training |
| 4 Week | Maxsurf Training |
| 5 Week to 8 Week | Working on live project using SACS/MOSES and Staad Pro software. |

1st Week Staad Pro Training

Introduction

- Introduction of Bentley software's
- About Staad.Pro and Applications
- Application in Industry University
- Traditional Structural Analysis vs. MODERN approach
- By HAND Vs. By computer
- STAAD Module Orientation
- Analysis capability and International Code support
- 3rd part integration support
- GUI Quick overview
- Model Generation Techniques
- Command File editor info
- Built-in info order
- Load types and Generation
- Model Verifications
- Adv. Analysis capability
- Result verification and post processing
- Design code-RCC and Steel
- Report customization

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Solving Method

- Solving Approach
- How to start STAAD.Pro V8i
- Navigating STAAD.Pro V8i GUI
- Configuration & Settings
- Unit and Code configuration
- Back Up Manager
- Opening and Saving Projects
- Archiving Projects
- Overview of Structure
- Status Bar details Hierarchy Managing
- Understand the different component of GUI
- VIEW Controls

Geometry Operations

- Renumbering
- Importing CAD Files
- Details About Grid systems in STAAD.
- Types of Structure and Methods
- Types of Element
- Mode of Structure
- Creating Geometry for Structure
- How to create Beam /Column
- Structure Wizard
- Structure Wizard Model and STAAD Transfer
- Modifying Geometry for Structure Copy /Copy-Link/Rotate/Mirror etc)
- Add Mid points
- Add Perpendicular intersection beam
- Cut Section
- Stretch /Split BEAMS
- Hot spots
- Fill Plates
- Different Viewing Controls for Structure Geometry

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Boundary Conditions & Properties

- Properties of beam/column
- Display properties
- Rendering
- Steel profiles
- Material + CROSS SECTION
- Beam and column end offset + adv. options
- Beta orientation control
- Assigning method
- Types of support
- Material Assignment
- Material creation

Load Types

- Load case
- Defining Load case
- Dead Load defining
- Imposed Load defining (LIVE)
- Point Load
- UDL Load
- Floor Load
- Area Load
- Wind Load –IS Code based
- Seismic Load-IS Code based
- Load combinations
- Auto LOAD Combinations
- Envelopes

Post-Processing

- Analysis Outline
- Analysis/Print
- Nodal Results
- Beam/Plate Results
- Analysis report formation
- Internal Hinge
- User Customized

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- Bracing with Truss or Tension Members
- Building with Flat Slab & Shear
- Transfer Force for Connection Design
- Projects

Modal Analysis

- What is Modal Frequency or fundamental Frequency
- Necessary for conducting Modal Analysis
- Parameters need to check after Analysis

2nd Week SACS Training

Determine the system capabilities & the new features of SACS & be able to explain its system configuration

- Introduction
- Fixed Platform Nomenclature
- Platform Concepts
- Analysis techniques
- Codes and Standards
- SACS Software Modules
- Module arrangement
- Global Settings
- File naming convention
- Setting up project, run files etc..
- Precede, Data Generator and Editor

Creating Structural models with SACS using the graphical interface and be able to demonstrate the method of creating a new model using the wizard & also inputting the Member properties.

Creating the Model

- Using Precede and Structural Wizard
- Members
- Wish bones

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- Main piles
- Conductor Modeling
- Inputting Material Properties
- Plate Groups
- Local and Global Coordinate Systems

Defining the Design Parameters

- Joint Connection Design
- Define Beam Offsets
- Define Member Code Check Properties

Loading the Model

- Dead Load
- Applied Loads – Joint and Member loads
- Over rides (Member and Group)
- Simulation of non-structural elements such as anodes, walkways, stairs etc...
- Loading the Structure (Using the Weight feature): Surface Loads, Equipment Footprint Loads, Appurtenant Structure Loads, Inertia Loading

Understand the user-defined loading & be able to input environmental loading from waves, wind, current etc... Define the Load Combinations. Performing the Static Inplace Analysis based on the model that has been created. Also understand about the various factors to be considered for doing the Inplace analysis.

Environmental Loading

- Wind Area Definitions
- Wind Loads
- Wave and Current Loading
- Buoyancy Loads
- Marine growth
- Hydrodynamic Coefficients
- Wave Kinematics and Current Blockage Factor
- Hydrostatic Collapse check

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Preparing for Analysis

- Load Combinations
- Allowable Stress Modification factor
- Unity Check Partition Table
- Code Check & other Analysis options
- Defining Boundary Conditions

Creating Joint Can Data File

- Joint Check Options
- Joint Can File

Analysis Results

- Codes and Standards
- Analysis and review of results
- Interpretation of List files
- PostVue Files
- Viewing Results in 3D
- Member Unity Checks and Unity Check Plots
- Member Review and Redesign
- Joint Design Review and Redesign
- Data Extraction and Report Preparation

3rd Week MOSES Training

- MOSES General Presentation
- MOSES System Presentation
- MOSES Module presentation
- Analysis
- User's Manual and Help
- Analysis Sample
- MOSES Hull Modeller - Features
- A sample model for curved bow barge

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- MOSES - Stability - GUI
- A Sample stability analysis definition - Using the modeled barge
- Export of files from GUI to MOSES Environment
- Curve of Forms
- Hydrostatic curves
- Ballast Definition
- Righting arm curve generation
- Stability code and guidelines checks
- MOSES - Motions - GUI
- Environment Definiton
- RAO calculation
- RAO with vessel speed

4th Week Maxsurf Training

- Introduction to Software & Maxsurf Modeler
- Maxsurf Modeler : Create a Model & Different ways to create it.
- Hands on Parctice - Maxsurf Modeler : Create a Model & Different ways to create it
- Maxsurf Modeler : with Lines Plan or Offset table creating Model
- Hands on Practice - Maxsurf Modeler : with Lines Plan or Offset table creating Model
- Maxsurf Modeler : Inputs, Design Grid & Other Functions

- Maxsurf Stability : Hydrostatic particulars, KN data & Other parameters
- Maxsurf Stability : Create Different types of Tanks & Compartments, Tank/Compartment Calibration
- Hands on Practice -Maxsurf Stability : Create Different types of Tanks & Compartments, Tank/Compartment Calibration
- Maxsurf Stability : Inputs for Stability Analysis, Criteria Selection & Results, Deterministic Damage Stability
- Maxsurf Stability : Inputs for Stability Analysis, Criteria Selection & Results, Deterministic Damage Stability

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- Maxsurf Stability : Probabilistic Damage
- Hands on Practice - Maxsurf Stability : Probabilistic Damage
- Cont..Hands on Practice - Maxsurf Stability : Probabilistic Damage
- Maxsurf Stability : Batch Analysis, Reporting
- Maxsurf Resistance Intro and working on it

5th to 8th Week Working on live project using SACS/MOSES and Staad Pro software

Regards

Tarun Rewari
Director
Aryatech Marine & Offshore Services Pvt. Ltd