OFFSHORE STRUCTURES UNDER SPECIAL LOADS INCLUDING FIRE RESISTANCE

COURSE OUTLINE:

This course deals with novelty of offshore structures and their response behaviour under special loads. These loads include earthquake loads, ice loads, shock and impact loads, ringing and springing wave loads and loads caused by critical sea states. The course also deals with advanced structural analyses methods including unsymmetric bending and estimate of shear centre. It also deals with analysis of curved beams, crane hooks, chain links and rings and marine risers under Vortex induced motion. Fire in one of the major hazards in offshore industry. Fire-resistant design is a mandatory requirement for members exposed to high fire hazards. This course will expose participants to fundamentals and explain the fire-resistant design concepts through a variety of examples.

ABOUT INSTRUCTOR:

Dr. Srinivasan Chandrasekaran is currently a Professor in the Dept. of Ocean Engineering, Indian Institute of Technology Madras, India. He has teaching, research and industrial experience of about 23 years during which he has supervised many sponsored research projects and offshore consultancy assignments both in India and abroad. His active areas of research include dynamic analysis and design of offshore platforms, Development of geometric forms of compliant offshore structures for ultra-deep water oil exploration and production, sub-sea engineering, Rehabilitation and retrofitting of offshore platforms, structural health monitoring of ocean structures, seismic analysis and design of structures and risk analyses and reliability studies of offshore and petroleum engineering plants.

COURSE PLAN

Week 1 : Novelty of offshore structures
Week 2 : Environmental loads
Week 3 : Special loads-I
Week 4 : Special loads-II
Week 5 : Advanced structural analysis-I
Week 6 : Advanced structural analysis-II
Week 7 : Advanced structural analysis - III
Week 8 : Advanced structural analysis - IV
Week 9 : Fire safety
Week 10 : Blast resistance
Week 11 : Material properties
Week 12 : Fire resistant design