

## **OE6510: HSE PRACTICES IN OFFSHORE, PORT, HARBOUR AND SHIP BUILDING**

### **Course Content:**

Environmental issues and management that arise from process plants, drilling and oil exploration  
Safety assurance and assessment in design and operations- Safety guidelines- Safety procedures in preliminary design- Operational safety Hazard classification and assessments- accident modeling, risk assessment and management Qualitative and Quantitative Risk Assessment- PUFF and PLUME models in air dispersion- chemical pollution- Emergency Response Planning guidelines- industrial regulations and practices Case studies on Industrial and Process safety- Hazop and Hazid studies- Failure Mode and Effect Analysis for new engineering systems- Misuse of designed structure Reliability, Availability and Maintainability (RAM) analysis and applications to offshore plants.

### **Text Books:**

1. **Jan Erik Vinnem.** 2007. Offshore Risk Assessment- Vol. 1: Principles, Modeling and Applications of QRA studies, 4th Ed., Springer, ISBN: 978-144-7174-431
2. **Stanislav Patin.** 1999. Environmental Impact of the Offshore Oil and Gas Industry. Eco Monitor Publishing, USA, ISBN: 978-096-7183-602
3. **Srinivasan Chandrasekaran.** 2016. Health, Safety and Environmental Management in Offshore and Petroleum Engineering, John Wiley & Sons, ISBN: 978-11-192-2184-5.
4. **Terje Aven and Jan Erik Vinnem.** 2007. Risk Management with applications from Offshore Petroleum Industry, Springer-Verlag, London, ISBN: 978-1-84628-652-0

### **Reference Books:**

1. **Srinivasan Chandrasekaran** 2015. HSE in offshore and petroleum engineering, Lecture notes of online web course, Mass Open-source Online Courses (MOOC), National Program on Technology Enhancement and Learning (NPTEL), Govt. of India.
2. **Srinivasan Chandrasekaran.** 2016. Offshore structural engineering: Reliability and Risk Assessment. CRC Press, Florida, ISBN:978-14-987-6519-0
3. **Ramamurthy, K.** 2011. Modeling Explosions and blast waves, Springer Cham, ISBN: 978-3-030-74337-6
4. **Ramamurthy, R.** 2011. Explosion and explosion-safety, Tata McGraw Hill, ISBN: 978-007-0704-473
5. **Skelton, B.** 1997. Process safety analysis, Gulf Publishing Company, Houston, 210pp.

### **Prerequisite:**

NIL