NPTEL Syllabus

NOC:HSE for offshore and petroleum engineers- Practices - Video course

COURSE OUTLINE
The course will give an overview of the safety and environmental issues in the petroleum industry. It will provide detailed understanding of the methods and techniques to resolve these key issues for making petroleum production and processing, cleaner and safer. This course would educate the participants to identify and assess hazards in any stage of operation, to quantify and manage them as well. This course will also highlight lessons learnt from the past accidents.

COURSE DETAIL

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<th>Week No</th>
<th>Topic</th>
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<td>1</td>
<td>Environmental issues and management&lt;br&gt;Environmental impact and management&lt;br&gt;Impact of oil and gas industry in marine environment&lt;br&gt;Oil hydrocarbons in marine environment&lt;br&gt;Chemical disposal of offshore industry and environmental management&lt;br&gt;Dispersion models and atmospheric pollution&lt;br&gt;Dispersion models continued..&lt;br&gt;Hazard assessment</td>
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<td>2</td>
<td>Operational Safety&lt;br&gt;Introduction to HSE&lt;br&gt;Safety assurance&lt;br&gt;Safety in design and operations&lt;br&gt;Organizing for safety&lt;br&gt;Hazard classification and assessment, Hazard evaluation and control&lt;br&gt;Hazop&lt;br&gt;FMEA</td>
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<td>3</td>
<td>Accident modeling, risk assessment &amp; management&lt;br&gt;Dose assessment, safety regulations&lt;br&gt;Toxic releases- models and methods&lt;br&gt;Chemical risk analysis&lt;br&gt;Quantitative risk assessment&lt;br&gt;Fire and explosion models&lt;br&gt;Flammability diagrams&lt;br&gt;Fire and explosion: prevention methods&lt;br&gt;Event tree and fault tree analyses&lt;br&gt;Process safety management&lt;br&gt;Software used in HSE</td>
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Pre-requisites:
UG/PG/Ph.D of all engg branches and PG of applied sciences; Diploma students can also register

Additional Reading:


International Conference on Health, Safety and Environment, Jakarta, January.


49. Srinivasan Chandrasekaran 2011d. Strategic Rig Project Commissioning
50. 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.


52. Srinivasan Chandrasekaran and Harinder. 2014. Failure mode and effects analysis of Mechanical wave energy converters. Ind J of Intelligent Engineering informatics (in press)


63. Srinivasan Chandrasekaran. 2014a. Heath, Safety and Environmental Management (HSE), Key note address at National Research Foundation of Korea, HRD Team for Offshore Plant FEED Engineering, Changwon National University, South Korea, 25th Feb 2014.


Coordinators:
**Dr. Srinivasan Chandrasekaran**
Department of Ocean Engineering, IIT Madras