Health, Safety and Environmental Management in Petroleum and Offshore Engineering - Web course

COURSE OUTLINE

Course objectives:

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 students 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 contents:

Introduction to safety, health and environmental management- Basic terms and their definitions- Importance of safety- safety assurance and assessment- safety in design and operation- organizing for safety.

Hazard classification and assessment- hazard evaluation and hazard control.

Environmental issues and Management- atmospheric pollution- flaring and fugitive release- water pollution- drilling waste, produced water, oil spills, cooling water, processed water- soil waste- rock cutting.

Oil sludge, drilling solid waste, production waste- Environmental monitoring- environmental impact and decommissioning- environmental management.

Accidents modeling- release modeling- fire and explosion modeling- toxic release and dispersion modeling- accident investigation and reporting- concepts of HAZOP and PHA.

Safety measures in design and process operations- inerting, explosion, fire prevention, sprinkler systems

Marine systems risk modeling- risk management principles and methods and concept optimization for offshore petroleum industry.

Analysis of case studies from offshore and petroleum industry.

### COURSE DETAIL

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<tr>
<th>Module No</th>
<th>Topic/s</th>
<th>No.of Lectures</th>
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<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Module</td>
<td>Introduction to safety, health and environmental management. Basic terms and their definitions. Importance of safety in petroleum and offshore industry. Safety assurance and assessment. Safety in design and operation. Organizing for safety. Hazard classification and assessment. Hazard evaluation and hazard control.</td>
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<td>3&lt;sup&gt;rd&lt;/sup&gt; Module</td>
<td>Accidents modeling- release modeling. Fire and explosion modeling. Toxic release and dispersion modeling. Accident investigation and reporting.</td>
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<td>4th Module</td>
<td>Safety measures in design and process operations- inerting, explosion, fire prevention, sprinkler systems. Principles and methods and concept optimization for offshore petroleum industry. Analysis of case studies from offshore and petroleum industry.</td>
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<td>Total</td>
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**References:**


Council of Oil and the Environment.

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http://nptel.iitm.ac.in