## Safety & Environment in Petroleum Industry

<table>
<thead>
<tr>
<th>Module Title</th>
<th>Safety &amp; Environment in Petroleum Industry</th>
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<tbody>
<tr>
<td>Level</td>
<td>6</td>
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<tr>
<td>Reference No. (showing level)</td>
<td>EAX_6_290/PTRL21H04</td>
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<tr>
<td>Credit Value</td>
<td>10 credit points</td>
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<tr>
<td>Student Study Hours</td>
<td>Contact hours: 22 lectures + 11 Tutors</td>
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<td>Student managed learning hours: 100</td>
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<td>Pre-requisite learning</td>
<td>-</td>
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<td>Co-requisites</td>
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<td>Excluded combinations</td>
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<tr>
<td>Module co-ordinator (Name + Email)</td>
<td>Dr. sayed Helal <a href="mailto:sayed.helal@yahoo.com">sayed.helal@yahoo.com</a></td>
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<tr>
<td>Faculty/Department</td>
<td>petroleum &amp; Gas technology Industry</td>
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### Short Description
Safety is concerned with the study of risk assessment of any hazard in oil and gas industry and how to control top event before and after the incident.

### Aims
The aims of this module are:
- The aim of this module is for students to understand the principles of safety and environment which have become important elements of all aspects of the petroleum industry.
- By the end of this module students will be able to plan for the safe execution of sustainable projects within the petroleum industry.

### Learning Outcomes

#### Knowledge and Understanding:
1. scientific principles of safety and environmental issues relating to projects and field operations;
2. the importance and implementation of safety awareness in the petroleum industry;

#### Intellectual Skills:
3. identify, describe, evaluate and propose risk reduction strategies to potential hazards and their associated consequences and be able to relate them to safety, environmental and/or performance concerns;
4. solve safety and environmentally-related problems in compliance with legislative requirements;

#### Practical Skills:
5. apply safety concepts to ensure the reduction of risk reduction to in field practices;
6. analyse/investigate safety accidents and EIA (environmental impact assessment) reports;
7. ensure fitness for purpose for all aspects of problems in oil production operations;

#### Transferable Skills:
8. communicate effectively with colleagues and professionals so as to raise awareness of quality issues and safety and environmental issues among persons in current and future operations.
9. development risk assessment of petroleum eng projects.

### Employability
To prepare student to get job and be professional graduate in
future, the development of one or more of top engineering skills, namely problem solving, communication, management and environment and economics, is addressed in this module. Personal development planning is also one of our focuses in this module.

### Teaching and learning pattern

1. 22, 1h lectures. This method informs learning outcomes 1, 2, 3, 4.
2. 11, 1h workshops and practical risk assessment sessions. This method informs learning outcomes 5, 6, 7, 8, 9.

### Indicative content

- importance of safety and environmental issues in field practice;
- fundamentals of safety measures and actions;
- safety performance and lost time incidents;
- techniques to improve safety performance;
- commitment and safety awareness;
- hazard and operability studies (HAZOP);
- the safety triangle and procedures;
- safety management systems (SMS);
- environmental Impact Assessment (EIA);
- the EIA process;
- Gas venting and planning;
- oil-in-water emissions;
- chlorofluorohydrocarbons (CFC) gases;
- Waste disposal.

### Assessment Elements & weightings

- **Examination**: A 180 minute unseen written examination assesses learning outcomes 1, 2, 3, 4. **70%**
- **Course Work**: 30% Project performing a risk assessment. The final mark will be split according to 20% for a written report (3000 words) and 10% for poster presentation. This method assesses learning outcomes 5, 6, 7, 8, 9. **30%**
- Students must achieve (i) 40% for the total module mark and (ii) at least 30% in the unseen examination and the course work in order to achieve an overall passing mark for this module.

### Indicative Sources (Reading lists)