



Course Syllabus

Course Code	Course Title	ECTS Credits
MBAN-763DE	Energy Safety and Risk Management in the Hydrocarbon Industry	6
Prerequisites	Department	Semester
None	School of Business	Fall, Spring
Type of Course	Field	Language of Instruction
Concentration	Energy, Oil & Natural Gas	English
Level of Course	Lecturer(s)	Year of Study
2 nd Cycle	STAFF	1 st or 2 nd
Mode of Delivery	Work Placement	Prerequisites
Distance Learning	N/A	None

Course Objectives:

The main objectives of the course are to:

- Comprehensively analyse the concept of energy safety and risk management analysis in the global oil and gas industry
- Reflect on the safety challenges of onshore and offshore oil and gas activities by identifying the principal operational hazards of the industry
- Comparatively assess the various measures and aspects of risk prevention, mitigation and crisis management utilized by the oil & gas industry
- Evaluate the flaws of pre-existing safety procedures that led to major industry accidents with an emphasis on offshore upstream activities
- Measure the effectiveness of various national regulations on the safety and operations of hydrocarbon exploration, exploitation, processing, transportation, distribution and storage with an emphasis on US and EU regulations

Learning Outcomes:

After and during the completion of this module, students are expected to be able to:

1. critically review alternative theories on the definition and dimensions of energy safety and operational risk management in the oil and gas industry
2. reflect on the reasons behind different energy safety failure that led to catastrophic accidents with an emphasis in offshore oil and gas operations
3. debate the effectiveness of different risk management techniques applied in various aspects of the hydrocarbon industry

4. formulate a comprehensive assessment of the differences, the similarities and the relative efficacy of the crisis mitigation and response mechanism processes in the US and the EU

“Details on the contribution of the course’s learning outcomes towards the learning goals / competencies and learning objectives of the programme are included in the curriculum map of each programme”.

Course Content:

The Course outline is developed over 12 weeks by focusing each week on the following topics:

1. Energy Safety: Definition and Dimensions
2. Risk Management Analysis: Identifying and anticipating hazards
3. Operational Safety
4. Contingency Planning
5. Incident Investigation
6. Case Study: The Piper Alpha Accident
7. Case Study: The Deep Water Horizon Accident
8. Research/Case Study Assignment Presentation
9. Risk Management Techniques in the Oil and Gas Industry
10. US policies and regulations on offshore oil and gas activities
11. EU policies and regulations on offshore oil and gas activities
12. Case Study: The regulatory gap in the Eastern Mediterranean

Learning Activities and Teaching Methods:

Module is delivered by online lectures, case studies, in-forum exercises and guided discussions

Assessment Methods:

Assignments, guided online discussion, final exam

Required Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
New Tools, Old Tasks Safety Implications of New Technologies and Work Processes for Integrated Operations in the Petroleum Industry	Haavik, T.	Ashgate	2013	9781317087885

Oil Spill Monitoring Handbook	Hook, S., Batley, G., Holloway, M., Irving, P, and Ross. A.	Csiro Publishing	2016	9781486306343
Macondo Well Deepwater Horizon Blowout: Lessons for Improving Offshore Drilling Safety	US National Research Council	National Academies Press	2012	9780309221382

Recommended Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Best Available and Safest Technologies for Offshore Oil and Gas Operations: Options for Implementation	US National Research Council	National Academies Press	2013	
Handbook of Fire and Explosion Protection Engineering Principles: For Oil, Gas, Chemical and Related Facilities	Nolan, D.	Gulf Publishing/Elsevier	2011	
International Certificate in Oil and Gas Safety	NEBOSH	Woodside	2010	
Environmental, Health and Safety Guidelines for Offshore Oil and Gas Development	World Bank Group	World Bank	2007	