Liverpool John Moores University

Title: Offshore Wind Farm Safety Assurance and Justification
Status: Definitive
Code: **7576RTC**   (120430)
Version Start Date: 01-08-2019

Owning School/Faculty: Maritime and Mechanical Engineering
Teaching School/Faculty: Risktec Solutions

Team	Leader
Alan Wall	Y

Academic Level:	FHEQ7	**Credit Value:**	10	**Total Delivered Hours:**	16.5
Total Learning Hours:	100	**Private Study:**	83.5		

Delivery Options
Course typically offered: Semester 1

Component	Contact Hours
Lecture	.5
Online	8
Tutorial	8

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	An essay question comprising several component parts, based around a case study, up to 4,000 words long.	95	
Test	AS2	Individual and group activities e. g. quiz, forum.	5	

Aims

To introduce the concept of HSE risk management within the offshore wind industry, providing participants with a level of understanding of risk management principles commensurate with the magnitude of risks associated with this industry

Learning Outcomes

After completing the module the student should be able to:

1. Evaluate the various risk assessment tools/techniques available and deduce the most appropriate tool for a certain circumstances.
2. Apply appropriate risk assessment tools to situations relevant to the offshore wind industry.
3. Discuss the concepts of "Tolerability of Risk (TOR)" and "As Low As Reasonably Practicable (ALARP)".
4. Apply the ALARP concept and conduct an ALARP assessment to an appropriate level of detail and analyse findings.
5. Justify the role and need for a "Safety Case" in the offshore wind industry and explore in depth the content required within a Safety Case for an offshore wind farm.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

4000 word essay   1   2   3   4   5

Individual and group work   1

Outline Syllabus

Introduction to Risk Management
Hazard Identification
Risk Analysis
Bowtie Analysis
Fault Tree and Event Tree Analysis
Quantitative Risk Assessment
Risk Reduction and ALARP
Tolerability of Risk
Asset Integrity Management
Safety/HSE Cases

Learning Activities

A combination of lectures, exercises and supported self study.

Notes

The aim of this course is to introduce the concept of HSE risk management within the offshore wind industry, providing participants with a level of understanding of risk management principles commensurate with the magnitude of risks associated with

this industry. It introduces practical tools and techniques to ensure offshore wind projects are conceived and executed safely and uses lessons learned from other more mature industries to establish an outline framework for a robust safety justification for an offshore wind farm.

Assessment is in the form of an essay combined with activities (e.g. exercises, discussions, etc.). The delivery modes for the module elements are explained below.

Lecture (using slides and notes): will be delivered by classroom based teacher (face to face) or online self-study (distance learning) or mixture of the two (blended learning).

Tutorial/Activities (exercises and reviews): will be delivered by classroom based teacher (face to face) or online activities with teacher feedback/virtual classroom (distance learning) or mixture of the two (blended learning).

Tutor supported online: will be delivered by email support prior to assessment submission (face to face) or tutor feedback activities, virtual classrooms and email support (distance learning) or mixture of the two (blended learning).