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MODULE DESCRIPTOR

Module Title

Oceans and Operability

Reference	ENM242	Version	2
Created	March 2020	SCQF Level	SCQF 11
Approved	September 2017	SCQF Points	15
Amended	June 2020	ECTS Points	7.5

Aims of Module

This module provides the fundamental knowledge and understanding of ocean engineering with an overview of the ocean environment, modelling and analysis of design environment, and analysis of underwater systems.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

1	Demonstrate detailed knowledge of the ocean environment and its application in offshore operations.
2	Critically analyse sea states using statistical and spectral methods and predict sea state parameters based on wind data.
3	Critically analyse and evaluate metocean loads acting on offshore structures.
4	Apply relevant techniques to evaluate operability based on metocean data.
5	Critically analyse and evaluate the systems (such as diving operations and ROVs) used in underwater intervention.

Indicative Module Content

Introduction to Ocean Environment; Offshore Structures; Geotechnical & Geophysical Methods; Introduction to Waves; Anaylsis of Sea States; Metocean Load Modelling; Vessel Motion; Operability; Diving Operations; Remote Operated Vehicle (ROV) Operations.

Module Delivery

The module will be delivered by means of face to face (full time) and online (online learning) lectures, tutorials, and self guided study.

Indicative Student Workload	Full Time	Part Time
Contact Hours	48	60
Non-Contact Hours	102	90
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	150
Actual Placement hours for professional, statutory or regulatory body		

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ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Coursework	Weighting:	50%	Outcomes Assessed:	4
Description:	Component 1 is coursework and will involve preparation of a short individual report combined online activities for distance learning students and classroom test for full time students.				

Component 2

Type:	Examination	Weighting:	50%	Outcomes Assessed:	1, 2, 3, 5
Description:	Component 2 is a closed book examination.				

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

In order to pass the module, students should achieve a mark of at least 40% in each component (which has a weighting of 30% or more) and an overall grade of D or greater. Non Submission for any assessment component will result in an overall grade of NS for the module.

Module Grade	Minimum Requirements to achieve Module Grade:
A	Greater than or equal to 70%
B	In the range 60% to 69%
C	In the range 55% to 59%
D	In the range 50% to 54%
E	In the range 40% to 49%
F	Less than 40%
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module	Normally a UK honours degree, or equivalent, in Engineering or related discipline at class 2.2 or above and proficiency in English language for academic purposes (IELTS minimum score of 6.5 or equivalent).
Corequisites for module	None.
Precluded Modules	This module is not suitable for students following an MSc in Professional Studies programme unless they meet the entry qualifications stipulated in the University Regulations on admission and the prerequisites above.

ADDITIONAL NOTES

Part Time refers to Online Learning (OL).

INDICATIVE BIBLIOGRAPHY

1	TRUJILLO, A.P. and THURMAN, H.V., 2014. Essentials of Oceanography, 11th ed. Harlow: Pearson.
2	RANDALL, R.E., 2010. Elements of Ocean Engineering, 2nd ed. College Station, TX.: Society of Naval Architects.
3	BAI, Y. and BAI, Q.,2012. Subsea engineering handbook. Oxford, UK: Elsevier Inc.