

MODULE DESCRIPTOR

Module Title

Oceans and Operability

Reference	ENM242	Version	3
Created	August 2021	SCQF Level	SCQF 11
Approved	September 2017	SCQF Points	15
Amended	August 2021	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; Analysis 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		

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:	Report combined with online activities for online learning students and classroom test for full time students.				

Component 2

Type:	Examination	Weighting:	50%	Outcomes Assessed:	1, 2, 3, 5
Description:	Closed book examination.				

MODULE PERFORMANCE DESCRIPTOR**Explanatory Text**

The module has 2 components and an overall grade D is required to pass the module. The component weighting is as follows: C1 is worth 50% and C2 is worth 50%.

		Examination:						
		A	B	C	D	E	F	NS
Coursework:	A	A	A	B	B	C	E	
	B	A	B	B	C	C	E	
	C	B	B	C	C	D	E	
	D	B	C	C	D	D	E	
	E	C	C	D	D	E	E	
	F	E	E	E	E	E	F	
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.