This Version is No Longer Current
The latest version of this module is available here

MODULE DESCRIPTOR

Module Title

Subsea Control Systems

Reference	ENM240	Version	2
Created	March 2017	SCQF Level	SCQF 11
Approved	April 2008	SCQF Points	15
Amended	September 2017	ECTS Points	7.5

Aims of Module

To provide a basis of understanding of control, electrical power distribution, control aspects of subsea processing, and telemetry systems to allow integrative design.

Learning Outcomes for Module

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

1	Understand the capabilities and constraints of typical E&P subsea control systems, and the role of software, safety and system engineering in such development.
2	Appraise sampling, modulation and multiplexing systems.
3	Analyse key subsea signal/power transmission elements.
4	Develop an integrated subsea communications and control system.

Indicative Module Content

Overview of Subsea Control Systems; Introduction to Control Theory; Hydraulic, Electro-hydraulic, and All Electric Systems; Telemetry; Signal Integrity, Data Conditioning and Compression; Sampling, Coding, Modulation and Multiplexing; Optical Fibre Transmission; Subsea Processing.

Module Delivery

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

Indicative Student Workload	Full Time	Part Time
Contact Hours	70	50
Non-Contact Hours	80	100
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	150
Actual Placement hours for professional, statutory or regulatory body		

Module Ref:	ENM240 v2

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 report presenting results. Also includes online activity for distance learning and classroom test for full time.				

Component 2

Type:	Examination	Weighting:	50%	Outcomes Assessed:	1, 2, 3
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. ADRIAANSEN, L., 2004. Subsea Control and Data Acquisition: Experience and Challenges (Imeche Event Publications), Professional Engineering Publishing.
2. Subsea Controls and Data Acquistion 2006: Controlling the Future Subsea. Proceedings for the international conference held in Toulon, France, on 7?8 June.
3. BAI, Y. and BAI, Q.,2012. Subsea engineering handbook. Oxford, UK: Elsevier Inc.