

This Version is No Longer Current
 The latest version of this module is available [here](#)

MODULE DESCRIPTOR

Module Title

Advanced Well Engineering

Reference	ENM212	Version	4
Created	April 2017	SCQF Level	SCQF 11
Approved	April 2006	SCQF Points	15
Amended	June 2017	ECTS Points	7.5

Aims of Module

This module focuses on the application of engineering practices to optimise and deliver enhanced productivity.

Learning Outcomes for Module

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

- 1 Design a strategy for optimising a mature asset using and justifying appropriate advanced drilling technologies.
- 2 Use a range of intervention techniques and well monitoring technologies to optimise well uptime.
- 3 Construct an example of QRA based well programming.
- 4 Produce a conceptual design for a deepwater well.

Indicative Module Content

1. High Pressure / High Temperature wells Techniques and Equipment 2. Deepwater Techniques and considerations 3. Underbalanced and TTRD Theory and practice 4 Extended Reach, Multilateral and Designer Design considerations Technology 5. Workover, Intervention and Well Management Techniques Productivity Issues Technology 6. QRA based well programming 7. Advanced Wells Drilling Equipment Completion Equipment Intelligent Wells Material Selection

Module Delivery

The module is presented through lectures, guest speakers from industry, case work and student centred learning.

Indicative Student Workload

	Full Time	Part Time
Contact Hours	40	10
Non-Contact Hours	110	140
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	150
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

ASSESSMENT PLAN

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

Component 1

Type: Coursework Weighting: 100% Outcomes Assessed: 1, 2, 3, 4
 Description: A coursework which will be in the form of a case study.

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

In order to pass the module, students should achieve a mark of at least 50% and an overall grade of D or greater.

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 2.2 honours degree or above, in Engineering or a related discipline. Proficiency in English language for academic purposes, or IELTS score of 6.5 or above. Qualification through previous relevant industry experience may be considered. ENM201 Wells.
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.

INDICATIVE BIBLIOGRAPHY

- 1 RABIA H. 1985. Oilwell Drilling Engineering. Graham & Trotman
- 2 ISLAM, M. RAFIQU L and HOSSAIN, M. ENAMUL. 2020. Drilling Engineering: Towards Achieving Total Sustainability. San Diego: Elsevier Science & Technology.
- 3 AADNOY, B.S. 2010. Modern Well Design. 2nd Edition. CRC Press
- 4 GEFEI, L. 2021. Applied Well Cementing Engineering. Gulf Professional Publishing.
- 5 BOURGOYNE et al. 1984. Applied Drilling Engineering. SPE Publications.
- 6 ROBINSON, H. and GARCIA, J. 2015. Drillers knowledge book: creative solutions for today's drilling challenges. Houston, Texas: International Association of Drilling Contractors.
- 7 Journal articles, conference proceedings, and appropriate websites. Example OnePetro, Knovel, ASME.