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MODULE DESCRIPTOR

Module Title

Offshore Engineering

| | | | |
|-----------|------------|-------------|--------|
| Reference | EN3581 | Version | 7 |
| Created | April 2022 | SCQF Level | SCQF 9 |
| Approved | March 2004 | SCQF Points | 15 |
| Amended | May 2022 | ECTS Points | 7.5 |

Aims of Module

To provide the student with a background to the offshore environment and an introduction to the core principles of offshore technology.

Learning Outcomes for Module

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

- 1 Explain how a well is drilled, including the functions of the specialist equipment.
- 2 Summarise the fundamentals of petroleum geology, including oil and gas reservoirs.
- 3 Apply standard hydrodynamic equations to predict the loading applied to fixed structures.
- 4 Appraise various options for the development of offshore oil and gas fields.

Indicative Module Content

Overview of overall well completion from exploration to drilling, completion and production. The Drilling System and Equipment. Basic introduction to well design. Production development options. Hydrodynamic effects. Environmental conditions - wind, wave and current. Wave loading and structural response. Principles of geology. Petroleum Geology. Oil and gas reservoirs.

Module Delivery

Full-time students: This module is delivered by a combination of lectures and tutorials. It will be supported by practical examples and activities including computer based laboratory exercises. Part-time students: This module is delivered by a combination of lectures and tutorials online. It will be supported by drop-in evening sessions and labs on campus. Assessments will primarily be online although exams will be held on campus with the full-time cohorts.

Indicative Student Workload

| | Full Time | Part Time |
|---|-----------|-----------|
| Contact Hours | 40 | 40 |
| Non-Contact Hours | 110 | 110 |
| 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: | 30% | Outcomes Assessed: | 2 |
| Description: | In-class quizzes. | | | | |

Component 2

| | | | | | |
|--------------|--------------------------|------------|-----|--------------------|---------|
| Type: | Examination | Weighting: | 70% | Outcomes Assessed: | 1, 3, 4 |
| Description: | Closed book examination. | | | | |

MODULE PERFORMANCE DESCRIPTOR**Explanatory Text**

The module has 2 components and to gain an overall pass a minimum D grade must be achieved in each component. The component weighting is as follows: C1 is worth 30% and C2 is worth 70%.

| | | | | | | | | |
|--------------|-----------|--|----------|----------|----------|----------|----------|-----------|
| | | Coursework: | | | | | | |
| | | A | B | C | D | E | F | NS |
| Examination: | A | A | A | B | B | E | E | |
| | B | B | B | B | C | E | E | |
| | C | B | C | C | C | E | E | |
| | D | C | C | D | D | E | E | |
| | E | E | E | E | E | E | F | |
| | F | F | F | F | F | F | F | |
| | NS | Non-submission of work by published deadline or non-attendance for examination | | | | | | |

Module Requirements

| | |
|--------------------------|-------|
| Prerequisites for Module | None. |
| Corequisites for module | None. |
| Precluded Modules | None. |

INDICATIVE BIBLIOGRAPHY

- 1 RABIA, H., 1985, Oilwell Drilling Engineering - Principles and Practice. London: Graham & Trotman
- 2 JAHN F., COOK, M. AND GRAHAM, M., 2008, Hydrocarbon Exploration and Production. Amsterdam : Elsevier.
- 3 International Association of Drilling Contractors (IADC), 2015 IADC Drilling Manual, 12th edition. International Association of Drilling Contractors (IADC), Houston, Texas.
- 4 SELLEY, R., Elements of Petroleum Geology ISBN-13: 978-0123860316
- 5 RANDALL, R.E., 2010. Elements of Ocean Engineering, 2nd ed. College Station, TX.: Society of Naval Architects.
- 6 Selley, Richard C., Sonnenberg, Stephen A., 2022, Elements of petroleum geology(4th ed). Amsterdam : Academic Press