



MODULE SPECIFICATION

| Part 1: Information | | | |
|---------------------------|--|--------------------|--|
| Module Title | Design of Structures | | |
| Module Code | UBGMSN-15-M | Level | Level 7 |
| For implementation from | 2019-20 | | |
| UWE Credit Rating | 15 | ECTS Credit Rating | 7.5 |
| Faculty | Faculty of Environment & Technology | Field | Geography and Environmental Management |
| Department | FET Dept of Geography & Environmental Mgmt | | |
| Module type: | Standard | | |
| Pre-requisites | None | | |
| Excluded Combinations | None | | |
| Co- requisites | None | | |
| Module Entry requirements | None | | |

| Part 2: Description |
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| <p>Educational Aims: See Learning Outcomes</p> <p>Outline Syllabus: Pre-stressed concrete structures: Basic principles and methods of pre-stressing; Materials for pre-stressing; pre-stress loss; Design of flexural members for serviceability and ultimate limit states.</p> <p>Water retaining concrete structures: Introduction to code of practice; Basis of design and materials, Design aspects of reinforced concrete water retaining structures (rectangular/Intze type) – calculation of crack widths due to external loads, calculation of crack widths in relation to thermal and moisture effects, Joints in water retaining structures, Design examples.</p> <p>Teaching and Learning Methods: Student time will be allocated as follows:</p> <p>Lectures: 48 hours</p> <p>Tutorials: 12 hours</p> <p>Directed Learning: 12 hours</p> |

STUDENT AND ACADEMIC SERVICES

Summative assessment: 42 hours

Self directed learning: 36 hours

Total student hours: 150 hours

Scheduled learning includes lectures, seminars, tutorials, project supervision, demonstration, practical classes and workshops; fieldwork; external visits; work based learning; supervised time in studio/workshop.

Independent learning includes hours engaged with essential reading, case study preparation, assignment preparation and completion etc.

The module will be delivered by means of a series of lectures and tutorials.

Part 3: Assessment

The strategy has been chosen to ensure that fundamental engineering principles are assessed under controlled conditions, while a more open ended research based assignments are used to encourage wider engagement and reflection on this topic.

Summative assessment comprises a 2 hr examination for component A and two assignments for component B.

Coursework Assignments:

Two assignments of 2000 words each will cover design of pre-stressed concrete structures and water retaining structures respectively. Students are assessed in learning outcomes 4-6 using these two assignments.

Examination:

The examination will cover the module syllabus as a whole, pulling together the individual learning outcomes 1-5. An open book format will be used to allow reference to appropriate codes and standards.

Formative assessment opportunities will be provided through four tutorial sessions and students are advised to attend all these tutorial sessions.

| First Sit Components | Final Assessment | Element weighting | Description |
|----------------------------------|------------------|-------------------|--|
| Written Assignment - Component B | | 25 % | Assignment 1 (pre-stressed concrete) 2000 words |
| Written Assignment - Component B | | 25 % | Assignment 2 (water retaining structures) 2000 words |
| Examination - Component A | ✓ | 50 % | Examination (120 minutes) |
| Resit Components | Final Assessment | Element weighting | Description |
| Written Assignment - Component B | | 25 % | Assignment 1 (pre-stressed concrete) 2000 words |
| Written Assignment - Component B | | 25 % | Assignment 2 (water retaining structures) 2000 words |
| Examination - Component A | ✓ | 50 % | Examination (120 minutes) |

STUDENT AND ACADEMIC SERVICES

| Part 4: Teaching and Learning Methods | | | | | | | | | | | | | | | | | | | |
|---|---|---------------------------------|------------------|---|-----|---|-----|---|-----|--|-----|--|-----|--|-----|------------------------------|-----|------------------------|-----|
| Learning Outcomes | <p>On successful completion of this module students will achieve the following learning outcomes:</p> <table border="1"> <thead> <tr> <th style="text-align: left;">Module Learning Outcomes</th> <th style="text-align: left;">Reference</th> </tr> </thead> <tbody> <tr> <td>Design statically determinate pre-stressed concrete beam elements</td> <td>MO1</td> </tr> <tr> <td>Demonstrate an in-depth understanding of the design of structures using pre-stressed concrete</td> <td>MO2</td> </tr> <tr> <td>Produce appropriate designs for rectangular overhead/ground water tanks</td> <td>MO3</td> </tr> <tr> <td>Appropriately use and apply technical design standards and other information sources</td> <td>MO4</td> </tr> <tr> <td>Convey complex information in the form of structural design calculations</td> <td>MO5</td> </tr> <tr> <td>Produce appropriate structural drawings based on design notes and sketches</td> <td>MO6</td> </tr> </tbody> </table> | Module Learning Outcomes | Reference | Design statically determinate pre-stressed concrete beam elements | MO1 | Demonstrate an in-depth understanding of the design of structures using pre-stressed concrete | MO2 | Produce appropriate designs for rectangular overhead/ground water tanks | MO3 | Appropriately use and apply technical design standards and other information sources | MO4 | Convey complex information in the form of structural design calculations | MO5 | Produce appropriate structural drawings based on design notes and sketches | MO6 | | | | |
| Module Learning Outcomes | Reference | | | | | | | | | | | | | | | | | | |
| Design statically determinate pre-stressed concrete beam elements | MO1 | | | | | | | | | | | | | | | | | | |
| Demonstrate an in-depth understanding of the design of structures using pre-stressed concrete | MO2 | | | | | | | | | | | | | | | | | | |
| Produce appropriate designs for rectangular overhead/ground water tanks | MO3 | | | | | | | | | | | | | | | | | | |
| Appropriately use and apply technical design standards and other information sources | MO4 | | | | | | | | | | | | | | | | | | |
| Convey complex information in the form of structural design calculations | MO5 | | | | | | | | | | | | | | | | | | |
| Produce appropriate structural drawings based on design notes and sketches | MO6 | | | | | | | | | | | | | | | | | | |
| Contact Hours | <table border="1"> <thead> <tr> <th colspan="2" style="text-align: left;">Independent Study Hours:</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Independent study/self-guided study</td> <td style="text-align: center;">78</td> </tr> <tr> <td style="text-align: right;">Total Independent Study Hours:</td> <td style="text-align: center;">78</td> </tr> <tr> <th colspan="2" style="text-align: left;">Scheduled Learning and Teaching Hours:</th> </tr> <tr> <td style="text-align: center;">Face-to-face learning</td> <td style="text-align: center;">60</td> </tr> <tr> <td style="text-align: center;">Tutorials</td> <td style="text-align: center;">12</td> </tr> <tr> <td style="text-align: right;">Total Scheduled Learning and Teaching Hours:</td> <td style="text-align: center;">72</td> </tr> <tr> <td style="text-align: left;">Hours to be allocated</td> <td style="text-align: center;">150</td> </tr> <tr> <td style="text-align: left;">Allocated Hours</td> <td style="text-align: center;">150</td> </tr> </tbody> </table> | Independent Study Hours: | | Independent study/self-guided study | 78 | Total Independent Study Hours: | 78 | Scheduled Learning and Teaching Hours: | | Face-to-face learning | 60 | Tutorials | 12 | Total Scheduled Learning and Teaching Hours: | 72 | Hours to be allocated | 150 | Allocated Hours | 150 |
| Independent Study Hours: | | | | | | | | | | | | | | | | | | | |
| Independent study/self-guided study | 78 | | | | | | | | | | | | | | | | | | |
| Total Independent Study Hours: | 78 | | | | | | | | | | | | | | | | | | |
| Scheduled Learning and Teaching Hours: | | | | | | | | | | | | | | | | | | | |
| Face-to-face learning | 60 | | | | | | | | | | | | | | | | | | |
| Tutorials | 12 | | | | | | | | | | | | | | | | | | |
| Total Scheduled Learning and Teaching Hours: | 72 | | | | | | | | | | | | | | | | | | |
| Hours to be allocated | 150 | | | | | | | | | | | | | | | | | | |
| Allocated Hours | 150 | | | | | | | | | | | | | | | | | | |
| Reading List | <p><i>The reading list for this module can be accessed via the following link:</i></p> <p>https://uwe.rl.talis.com/index.html</p> | | | | | | | | | | | | | | | | | | |

| Part 5: Contributes Towards |
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| This module contributes towards the following programmes of study: |