Module Descriptor

Foundation Mathematics 1

Module Code: ENM3001-B
Academic Year: 2018-19
Credit Rating: 20
School: Engineering and Informatics (Faculty-wide)
Subject Area: Engineering Mathematics
FHEQ Level: FHEQ Level 3

Pre-requisites:
Co-requisites:

Contact Hours

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>Lectures</td>
<td>48</td>
</tr>
<tr>
<td>Tutorials</td>
<td>24</td>
</tr>
<tr>
<td>Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>Directed Study</td>
<td>124</td>
</tr>
<tr>
<td>Examinations</td>
<td>2</td>
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</table>

Availability Periods

<table>
<thead>
<tr>
<th>Occurrence</th>
<th>Location/Period</th>
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<tbody>
<tr>
<td>BDA</td>
<td>University of Bradford / Semester 1 (Sep - Jan)</td>
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Module Aims

(1) To develop the basic skills of algebra and geometry and to introduce the mathematics of engineering. To extend the knowledge base in algebra and geometry and to introduce concepts of statistics.

(2) To provide students with an appreciation of the breadth of engineering. To develop computing skills. To successfully deploy these skills to generate and communicate engineering knowledge to a range of audiences.

Outline Syllabus
Basic algebra: rules of indices and logarithms, manipulation of formulas, factorisation, completing the square, linear and quadratic equations and associated inequalities.

- Plane co-ordinate geometry: distance, lines, circles.
- Functions: notation, polynomial, reciprocal, trigonometric, exponential and logarithmic functions with properties and graphs.
- Series: arithmetic, and geometric series.
- Information technologies: facilities, PC hardware, software.
- Use of Applications: Operating systems, word processing, data processing, data management, spreadsheets, mathematical programs (Matlab, Derive etc.).
- Limit definition and graphical representation.
- Derivatives and integrals of algebraic functions.

Module Learning Outcomes

On successful completion of this module, students will be able to...

1. apply standard algebraic techniques, geometry and trigonometry when solving problems; describe the capabilities and limitations of computer systems and know how to use these systems when solving problems.

2. see how different mathematical techniques are needed to solve problems in engineering contexts; use appropriate PC systems, tools and applications when solving problems.

3. apply the skills and knowledge learnt to systematic problem solving; use these skills for data management, data presentation and other IT processes.

Learning, Teaching and Assessment Strategy

Concepts, principles & practical calculations are developed and practised in mixed lecture/tutorial classes, and are consolidated in tutorial group sessions. Written classroom tests will assess the development of the application of practical skills to the knowledge base of the strand, and the formal examinations will assess the wider learning outcomes expressed in the descriptor. In all cases feedback is provided. Practical skills will be developed in laboratory sessions. Cognitive and personal skills will be developed by problem solving and design exercises.

Mode of Assessment

<table>
<thead>
<tr>
<th>Type</th>
<th>Method</th>
<th>Description</th>
<th>Length</th>
<th>Weighting</th>
<th>Final Assess'</th>
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<tbody>
<tr>
<td>Summative</td>
<td>Examination - closed book</td>
<td>Examination - closed book</td>
<td>2 hours</td>
<td>70%</td>
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<tr>
<td>Referral</td>
<td>Examination - closed book</td>
<td>Supplementary</td>
<td>3 hours</td>
<td>100%</td>
<td>No</td>
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<tr>
<td>Summative</td>
<td>Classroom test</td>
<td>2 1.00 hour tests under exam conditions with</td>
<td>1 hour</td>
<td>30%</td>
<td>No</td>
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Legacy Code (if applicable)
ENG0300D

Reading List
To view Reading List, please go to rebus:list.