Fundamentals of Programming

Module Code: COS4016-B
Academic Year: 2018-19
Credit Rating: 20
School: Department of Computer Science
Subject Area: Computer Science
FHEQ Level: FHEQ Level 4

Pre-requisites:
Co-requisites:

Contact Hours

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>16</td>
</tr>
<tr>
<td>Laboratory</td>
<td>48</td>
</tr>
<tr>
<td>Directed Study</td>
<td>136</td>
</tr>
</tbody>
</table>

Availability Periods

<table>
<thead>
<tr>
<th>Occurrence</th>
<th>Location/Period</th>
</tr>
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<tbody>
<tr>
<td>NLA</td>
<td>Namal College / Semester 1 (Sep - Jan)</td>
</tr>
<tr>
<td>BDA</td>
<td>University of Bradford / Semester 1 (Sep - Jan)</td>
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Module Aims
To introduce fundamental principles of computer programming and software construction.
To develop skills in problem solving applied to computer programming.

Outline Syllabus
Introduction to problem solving techniques and their part in the software development process. Basic software tools for software development. The concepts of object, class and interface. Program constructs: sequence, selection and iteration. Testing and debugging programs.
Module Learning Outcomes

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

1. apply the basics of software construction and the tools required to support it in programs;
   - describe and use the terminology of object orientation;

2. apply basic principles of computer programming to common problems;
   - analyse and run computer program code;
   - test and evaluate programs against basic requirements.

3. apply algorithmic problem solving approaches.

Learning, Teaching and Assessment Strategy

Learning outcomes are developed through lecture classes that introduce concepts and connective material and present and review exercises, supplemented by laboratory-based exercises and coursework that provide practical experience and develop skills and techniques and address learning outcomes and complemented by weekly supervised laboratory classes (to provide some individual tuition and resolve problems) and provide students with the opportunity to receive continuous feedback on programming and development skills and address learning outcomes. Directed study includes reading activities, individual exercises and revision of concepts taught in the teaching sessions, and individual reading and application of documentation and programming examples from technical reports and book sections as well as the majority of practical work necessary to complete the coursework.

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>Coursework</td>
<td>An exercise in problem solving involving the development of computer software and an accompanying written report</td>
<td>50%</td>
<td>No</td>
<td></td>
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<tr>
<td>Summative</td>
<td>Classroom test</td>
<td>Computer-based lab test</td>
<td>2 hours</td>
<td>50%</td>
<td>Yes</td>
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Legacy Code (if applicable)
CM-0140D

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