<table>
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<tr>
<th>Module Code</th>
<th>CS1010</th>
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<tr>
<td>Module Name</td>
<td>Introduction to Programming</td>
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<tr>
<td>Module Short Title</td>
<td>N/a</td>
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<tr>
<td>ECTS weighting</td>
<td>10</td>
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<tr>
<td>Semester/term taught</td>
<td>Both semesters</td>
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| Contact Hours | Lecture hours: 44  
| | Lab hours: 22  
| | Tutorial hours: 22  
| | Total hours: 88 |
| Module Personnel | Lecturing staff: Dr. Kenneth Dawson-Howe & Dr. Arthur Hughes |
| Learning Outcomes | When students have successfully completed this module they should be able to:  
| | · Break problems into sub-problems, which can then be solved using simple algorithms.  
| | · Design algorithms using sequence, selection, and iteration.  
| | · Design, object-based (i.e., not using inheritance) programs using class-based decomposition.  
| | · Use an Interactive Development Environment (IDE) to write, compile, test, and debug a computer program.  
| | · Recognise the software engineering concerns that give rise to the use of classes and other abstraction mechanisms. |
| Module Learning Aims | This module provides an introductory course in computer programming. This course takes a practical approach to teaching the fundamental concepts of computer programming with a strong emphasis on tutorial and laboratory work and is an important vehicle for developing students’ analytical and problem-solving skills.  
| | This module aims to give students an understanding of how computers can be employed to solve real-world problems. Specifically, this course introduces students to the object-oriented approach to program design and teaches them how to write programs in an object-oriented language (in this case Java).  
| | Students also have the opportunity to reinforce their problem solving and programming skills by developing solutions to programming problems and implementing those solutions as |

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Specific topics addressed in this module include:

- Types and variables including integer and floating-point types.
- Assignment and expressions.
- Boolean expressions.
- Selection in Java: if, if-else, nested if and switch-case statements.
- Iteration in Java: while, do-while and for statements.
- Design of simple algorithms using sequence, selection, and iteration.
- Introduction to classes and objects including attributes and methods.
- Abstraction and encapsulation.
- Recursive methods.
- Characters and strings.
- Arrays including 2-dimensional arrays.

Recommended Reading List:
- Java: how to program by Paul Deitel and Harvey Deitel. Prentice Hall 2012

Please check the website for details of other texts and online resources.

Module Pre-Requisite
None

Module Co-Requisite
None

Assessment Details
To pass the annual examination in CS1010, candidates must achieve a mark of at least 40% overall. The overall mark is a weighted average of the annual examination mark (80%) and the coursework mark (20%).

The coursework in this course consists of a number of programming assignments (roughly 11 during the first semester and roughly 4 during the second semester) and eTests, along with some marks given for laboratory and tutorial sessions during the second semester.

Supplemental assessment is based on 100% examination only. To pass the supplemental examination in CS1010, candidates must achieve a mark of at least 40% in the supplemental
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