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| Module code: MOD005424 | Version: 1 Date Amended: 04/May/2016 |
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| 1. Module Title |
| Programming Concepts |

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| 2a. Module Leader |
| Jamie Myland |

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| 2b. Department |
| Department of Computing and Technology |

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| 2c. Faculty |
| Faculty of Science and Technology |

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| 3a. Level |
| 4 |

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| 3b. Module Type |
| Standard (fine graded) |

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| 4a. Credits |
| 15 |

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| 4b. Study Hours |
| 150 |

| 5. Restrictions | | | |
|--|-------------|-------------|-----------|
| Type | Module Code | Module Name | Condition |
| Pre-requisites: | None | | |
| Co-requisites: | None | | |
| Exclusions: | None | | |
| Courses to which this module is restricted: | | | |

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

Students will use industry-standard tools and techniques to design, implement, test and document simple programs using a current procedural language such as C#.

The module delivers the principal concepts of high-level programming, emphasises good programming practice and supports the techniques required to develop software which is robust, usable and maintainable. Skills developed will be directly transferable to the workplace.

Practice in the workshops will lead on to the assignment where students will design and produce a simple functional application meeting a specified need. This implemented design will be tested and shown as fit for purpose.

6b. Outline Content

Core Principal Components:

Control structures: sequence, selection, iteration

Boolean algebra.

Variables, constants, data types and operators.

Program design, program structure, testing/debugging methodologies, documentation.

Functions/procedures, algorithms (such as searching and sorting).

Simple data structures, such as arrays and records.

File handling

Introduction to the object-oriented paradigm: information hiding, encapsulation, classes and methods.

Principles of good programming practice; reuse, commenting, documentation.

6c. Key Texts/Literature

The reading list to support this module is available at: <http://readinglists.anglia.ac.uk/modules/mod005424>

6d. Specialist Learning Resources

Microsoft Visual Studio 2015 (Community Edition or Professional)

| 7. Learning Outcomes (threshold standards) | | |
|--|---|---|
| No. | Type | On successful completion of this module the student will be expected to be able to: |
| 1 | Knowledge and Understanding | Define and apply fundamental structures and syntax of programming in a popular high-level programming language. |
| 2 | Knowledge and Understanding | Develop object-orientated structures and validate their use in programming. |
| 3 | Intellectual, practical, affective and transferrable skills | Construct a working object orientated application to solve a given user requirement and appraise the solution. |
| 4 | Intellectual, practical, affective and transferrable skills | Document and test in order to justify and validate the programmed solution. |

| 8a. Module Occurrence to which this MDF Refers | | | | |
|--|------------|------------|---------------------------------|------------------|
| Year | Occurrence | Period | Location | Mode of Delivery |
| 2017/8 | F01UCP | Semester 1 | University Centre, Peterborough | Face to Face |

| 8b. Learning Activities for the above Module Occurrence | | | |
|---|-------|-------------------|---|
| Learning Activities | Hours | Learning Outcomes | Details of Duration, frequency and other comments |
| Lectures | 12 | 1,2,3,4 | E.g. lecture 1 hr x 12 weeks |
| Other teacher managed learning | 24 | 1,2,3,4 | E.g. workshops 2 hr x 12 weeks |
| Student managed learning | 114 | 1,2,3,4 | self-study and practice |
| TOTAL: | 150 | | |

| 9. Assessment for the above Module Occurrence | | | | | |
|--|-------------------|-------------------|---------------|-------------------------|---------------------|
| Assessment No. | Assessment Method | Learning Outcomes | Weighting (%) | Fine Grade or Pass/Fail | Qualifying Mark (%) |
| 010 | Practical | 1,2 | 0 (%) | Pass/Fail | 100 (%) |
| Demonstration 15 minutes (1,000 words equivalent) | | | | | |
| Assessment No. | Assessment Method | Learning Outcomes | Weighting (%) | Fine Grade or Pass/Fail | Qualifying Mark (%) |
| 011 | Coursework | 3,4 | 100 (%) | Fine Grade | 30 (%) |
| Report on design, implementation and evaluation (2,000 words equivalent) | | | | | |

In order to pass this module, students are required to achieve an overall mark of 40%.

In addition, students are required to:

(a) achieve the qualifying mark for each element of fine graded assessment of as specified above

(b) pass any pass/fail elements