F2C4-TCO Master of Science in Computing

PROGRAMME DETAILS
Programme Code: F2C4-TCO
Department: Computer Science
Main Award: MSC - Master of Science
Full Award Title: Master of Science in Computing
Level: Postgraduate Taught

LOCATION OF STUDY
Edinburgh Y Scottish Borders N Orkney N
Dubai N Malaysia N Approved Learning Partner N
Independent Distance Learners N Collaborative Learning Partner N Other N

ASSOCIATED AWARDS
<table>
<thead>
<tr>
<th>Programme Code</th>
<th>Award</th>
<th>Title</th>
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<tbody>
<tr>
<td>F2C4-TCO</td>
<td>MSC</td>
<td>Master of Science in Computing</td>
</tr>
<tr>
<td>F2C5-ZZZ</td>
<td>PGDIP</td>
<td>Postgraduate Diploma in Computing</td>
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<tr>
<td>F2C6-ZZZ</td>
<td>PGCERT</td>
<td>Postgraduate Certificate in Computer Science</td>
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ACCREDITATION
We will seek accreditation for this 2 year MSc in Computing from BCS, The Chartered Institute of IT when they next visit us in 2020 on their 5 year cycle of visits.

LEARNING OUTCOMES – SUBJECT MASTERY
Understanding, Knowledge and Cognitive Skills

- Critical understanding of the main theories, principles and concepts relating to the domain of computing and IT systems including terminology, conventions, standards and methodologies.

- Understanding and use of a significant range of the main skills, techniques and practices in software engineering and IT systems management, and a range of specialised skills, research and investigation techniques, and practices informed by current practices within the computing domain.

- Broad and deep knowledge of the main areas of software analysis, design, deployment, maintenance, management, trouble shooting, validation and verification.

Scholarship, Enquiry and Research (Research Informed Learning)

- Extensive, detailed and critical understanding of at least one specialist area in Computing obtained through researching the background to a substantial and challenging software engineering project by personal scholarship, design and development of a detailed software systems solution that incorporates significant proportions of analysis, design, implementation and evaluation.
LEARNING OUTCOMES – PERSONAL ABILITIES

Industrial, Commercial and Professional Practice

• Demonstrate critical awareness of current issues within computing application development, and make informed judgements about them in the light of relevant professional standards.

• Demonstrate an awareness of professional and research issues in the computing discipline, and an ability to critique current techniques and practice.

Autonomy, Accountability and Working With Others

• Work autonomously and within teams, as appropriate, demonstrating a capability for both taking and critically reflecting on roles and responsibilities.

• Develop and utilise advanced problem-solving skills and techniques in the shared development of original and creative solutions to general and specialist computing and IT management issues.

• Develop and demonstrate skills and techniques in communication with peers and academic/industrial staff, using a range of appropriate methods to suit different levels of knowledge and expertise within the audience.

Communication, Numeracy & Information and Communications Technology

• Develop and demonstrate the ability to communicate and present the main issues involved in software application development to a literate audience with appropriate use of modern presentational tools and aids.

• Demonstrate appropriate use of methods of calculation and estimation involved in planning computing systems solutions and solving their IT management implications.

APPROACHES TO TEACHING AND LEARNING
This programme is offered in a traditional campus-based, cohort model. Within the timetable, courses offer traditional lecture-based materials, small group tutorials and a variety of laboratory-based practicals. Students are expected to complete coursework in groups, teams and pairs, as well as individually, and courses offer a range of types of coursework for assessment, from discursive essay-style assignments to code design and generation. In some courses, team teaching approaches are adopted to provide additional support and variety, and electronic support, in the form of email lists, newsgroups and bulletin boards are widely used to disseminate information and support student communication and practice.

### EDUCATIONAL AIMS OF THE PROGRAMME

The educational aims of the 2 year MSc Computing programme are to:

#### Stage 1

- Enhance existing skills in code development through imparting detailed and extensive skills and experience in an object-oriented programming language in widespread professional use.

- Impart extensive knowledge and understanding of good practice, methodologies, standards, techniques and tools in software engineering.

- Cultivate extensive knowledge, critical understanding and a good range of practical skills in a few key topics in Computing.

- Develop English language skills contextualized through research preparation in Computing to a level appropriate for postgraduate taught study in stage 2.

- Provide tutorial and discussion opportunities of a style and at a level appropriate to prepare them for postgraduate taught study.

- Enable students to communicate and work effectively with peers and academic staff, demonstrating appropriate levels of autonomy, initiative and responsibility.

#### Stage 2

- Impart detailed knowledge and critical understanding in core areas of Computer Science including theories, principles and concepts.
• Inculcate a significant range of principal and specialist skills, techniques and practices in the Computing domain.

• Cultivate specialist knowledge of computing techniques as they apply to developing interactive, networked or secure applications.

• Instil the ability to critically review existing practice and develop original and creative solutions to problems requiring Computer Science solutions.

• Develop the ability to plan and execute a significant project of research, investigation or development in a specialist area within Computer Science, demonstrating extensive, detailed and critical understanding of that specialism.

ASSESSMENT POLICIES

The two year MSc in Computing is a full-time programme comprising two stages in successive years.

Stage 1

This stage consists of 8 taught courses, some mandatory and some optional, defined in the programme structure, which the students will study over two semesters. Assessment of the taught phase is through a variety of methods including coursework and/or examination. Students must submit all elements of assessment before being permitted to progress.
• Progression to stage 2 depends on passing 8 courses at grade D or better with an 8 course average of 50%.

• Students may retake the assessment of up to a maximum of 3 courses at the next opportunity, subject to payment of the appropriate fees to the University, and may be required to do so to obtain the necessary credits for progression or exit. Students may only resit courses for which their assessment grade is E or F (or a grade D if a C is required for progression to the next stage).

• Students may exit at the end of this stage with a Graduate Diploma in Computer Science if they get credits for 8 courses at level 9 or above at grade E or better with an 8 course average of 40%. They may exit with a Graduate Certificate in Computer Science after at least 1 semester of study if they get credits for 4 courses at grade E or better with a 4 course average of 40%.

• Students not meeting either the requirements for progression or for a Graduate Diploma or Graduate Certificate will not be eligible for any award.

Stage 2

This stage consist of two phases:
• A **taught phase**, consisting of a set of 8 taught courses, some mandatory and some optional, defined in the programme structure, which the students will study over two semesters. Assessment of the taught phase is through a variety of methods including coursework and/or examination. Students must submit all elements of assessment before being permitted to progress.

• A **dissertation phase**, consisting of an appropriate technical research project and project dissertation report.

• Students will normally complete the taught phase, at which point progression to the dissertation phase is dependent on assessed performance as being of Masters level standard. To progress students must get grade D or better in 8 stage 2 courses, get an 8 course average of 50% and pass F21RP with a mark of at least 45%.

• Any student may be reassessed in up to a maximum of 3 courses at the next opportunity, subject to payment of the appropriate fees to the University, and may be required to do so to obtain the necessary credits for completion of their programme or for progression. Students may only resit courses for which their assessment grade is E or F (or a D but only if that is required for them to qualify for an MSc degree). The method of reassessment for each course is specified in the appropriate course descriptor.

• Students meeting the required standards for Postgraduate Diploma and Postgraduate Certificate in the taught phase, but not meeting the Masters standard, will not be permitted to progress to the dissertation phase. Students may be recommended to graduate with a Postgraduate Diploma or a Postgraduate Certificate at this point.

• Students failing to meet the required standards for Postgraduate Diploma and Postgraduate Certificate in coursework and examination in the taught phase will not be permitted to progress to the dissertation phase, although they could be eligible for a Graduate Diploma in Computer Science.

### PROGRAMME STRUCTURE

<table>
<thead>
<tr>
<th>Mandatory Courses</th>
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<tbody>
<tr>
<td>Edinburgh</td>
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<td>X</td>
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<td>X</td>
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In Stage 1 students study on 8 taught courses (4 mandatory and 4 optional) worth 15 credits each.

In Stage 2 students study on 8 taught courses (4 mandatory and 4 optional) worth 15 credits each followed by a MSc dissertation project worth 60 credits.

Mandatory Credits 120
Optional Credits 120
Elective Credits
Dissertation Credits 60
Total 300

AWARDS, CREDITS AND CRITERIA(PG)

Awards, Credits and Levels

Masters Degree 300 300 SCQF credits including a minimum of 150 credit at Level 11
Postgraduate Diploma 120 120 SCQF credits including a minimum of 90 credit at Level 11
Postgraduate Certificate 60 60 SCQF credits including a minimum of 40 credit at Level 11

Award Requirements

<table>
<thead>
<tr>
<th>Award</th>
<th>Total Course Passes</th>
<th>Overall Mark</th>
<th>Overall Grade</th>
<th>Basis of Overall Mark/Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master (Distinction)</td>
<td>8+Dissertation</td>
<td>70</td>
<td>A</td>
<td>Credit Weighted Average greater than or equal 70% over 8 courses in Stage 2 at grades A-C (at the 1st attempt) plus a Dissertation at grade A.</td>
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<th>Level</th>
<th>Requirement</th>
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<tbody>
<tr>
<td>Master</td>
<td>Credit Weighted Average greater than or equal 50% over 8 courses in Stage 2 at grades A-D plus a Dissertation at minimum grade C.</td>
</tr>
<tr>
<td>Diploma (Distinction)</td>
<td>Credit Weighted Average greater than or equal 70% over 8 courses in Stage 2 at grades A-C (at the 1st attempt)</td>
</tr>
<tr>
<td>Diploma</td>
<td>Credit Weighted Average greater than or equal 40% over 8 courses in Stage 2 at grades A-E</td>
</tr>
<tr>
<td>Certificate</td>
<td>Credit Weighted Average greater than or equal 40% over 4 courses in Stage 2 at grades A-E</td>
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DURATION OF STUDY

<table>
<thead>
<tr>
<th>Level</th>
<th>Full-time</th>
<th>Part-time</th>
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<tbody>
<tr>
<td>Diploma</td>
<td>21</td>
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<tr>
<td>Certificate</td>
<td>16</td>
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<tr>
<td>Masters</td>
<td>12</td>
<td>24</td>
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RE-ASSESSMENT (PG)

1. A student who has been awarded a Grade E or F in a course in stage 1 or 2 may be re-assessed in that course. A student who has been awarded a Grade D in a course in stage 2 may be re-assessed in that course in order to proceed to or be eligible to receive the award of Masters.
2. A student shall be permitted only one re-assessment opportunity in a maximum of three taught courses in each stage. The opportunity for re-assessment in four or more taught courses in each stage shall be at the discretion of the Progression Board.
3. Any further re-assessment opportunities in a course will require the approval of the Postgraduate Studies Committee.
4. A student may be permitted, at the discretion of the Progression Board, to be re-assessed in the dissertation, project or other supervised research component of the course of study.

PROGRESSION TO DISSERTATION/PROJECT

Students may progress to the Dissertation if they have met the progression requirements in Stage 2 (taught course credit weighted average of 50% or better, all courses at Grade D or above and 45% or better in F21RP)