F1G1-MCS Bachelor of Science in Mathematics and Computer Science

PROGRAMME DETAILS
Programme Code: F1G1-MCS
Department: Mathematics
Main Award: BSCH - Bachelor of Science Honours
Full Award Title: Bachelor of Science in Mathematics and Computer Science
Level: Undergraduate

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
Programme Code Award Title
F1G1-MCS BSCH Bachelor of Science in Mathematics and Computer Science
F1G1-ZZZ BSCO Bachelor of Science in Mathematics and Computer Science

ACCREDITATION
N/A

LEARNING OUTCOMES – SUBJECT MASTERY
Understanding, Knowledge and Cognitive Skills

On completion of the programme students should be able to:

- demonstrate an understanding across a broad range of mathematics and computer science
- demonstrate a detailed knowledge and understanding in certain specific areas of mathematics and computer science
- demonstrate an understanding of the power of abstraction and of the notions of proof and logical reasoning
- demonstrate an appreciation of the usefulness of mathematics and computer science over a wide range of applications

Scholarship, Enquiry and Research (Research Informed Learning)

On completion of the programme students should be able to

- demonstrate a good level of skill in calculation and in mathematical manipulation
- demonstrate the ability to present rigorous arguments
- model real-life situations in mathematical terms and analyse the resulting models
- demonstrate computational skills involving the use of a range of software packages

LEARNING OUTCOMES – PERSONAL ABILITIES
Industrial, Commercial and Professional Practice
On completion of the programme, students will have the knowledge and skills for the development, application and consequent analysis of mathematics, mathematical models and techniques from computer science as currently required in modern industrial sectors, including IT, finance, engineering, and general science and technology. They will be able to identify, analyse and solve problems, and discuss issues at a professional level; they will also be able to critically review existing practices and will be in a strong position to move on to a professional environment, with sound knowledge, confidence and awareness of the nature of that environment and the demands it will make.

**Autonomy, Accountability and Working With Others**

On completion of the programme students will be able to:

- plan and organise their own learning through self management and time management
- demonstrate the ability to work with relatively little guidance or support, to undertake self-directed work and to meet deadlines
- communicate effectively at all levels and using a range of media
- interact effectively with professionals from a wide and diverse range of areas

**Communication, Numeracy & Information and Communications Technology**

On completion of the programme, students will be numerate, able to make presentations on specialised topics and able to communicate well with peers and other colleagues. They will have extensive IT knowledge and skills and will be able to use them confidently. They will also have the necessary background to enable them to be ready and able to communicate on technical and general matters with peers and senior colleagues.

**APPROACHES TO TEACHING AND LEARNING**

The following teaching methods are used: lectures, tutorials, computing laboratory work, coursework, projects. Teaching on the programme is student-focussed, with students encouraged to take responsibility for their own learning and development. In addition, students learn through structured group work in problems solving, collaborative student presentations, and independent study and technical project work. Resource-based and problem-based teaching styles are used to facilitate the motivational and assimilative phases of the learning process. The level and type of support available via VISION will vary between the modules as is appropriate for the subject matter. Approaches to learning and teaching are continually reviewed and developed with the aim of matching them to the abilities and experiences of the students.

**EDUCATIONAL AIMS OF THE PROGRAMME**

The principal aims of the programme are to:
• provide high-quality undergraduate education in a wide range of subjects in modern mathematics and computer science
• enable students to develop detailed knowledge and critical understanding of both theoretical and applied elements of mathematics and computer science
• provide students with training and practical experience of modelling, analysing and interpreting mathematical and real-world problems
• enable students to communicate and work effectively with peers and academic staff, demonstrating appropriate levels of autonomy, initiative, and responsibility
• provide students at the undergraduate level with the opportunity to plan and write a dissertation requiring detailed and critical understanding in an area of mathematics
• equip students with the grounding in mathematics and computer science necessary to go onto to further study or straight into graduate jobs

ASSESSMENT POLICIES

The assessment policy for the programme incorporates a range of assessment types. Continuous assessment during some modules and summative assessment at the conclusion of modules both contribute to the overall assessment and are used to formally measure achievement in specified learning outcomes. Understanding, knowledge and subject-specific skills are assessed by coursework assignments and written examinations. Formative assessment is used to provide feedback and to inform student learning. Approaches to assessment are continually reviewed. Specific details about methods of assessment are provided in the appropriate module descriptors.

PROGRAMME STRUCTURE

Mandatory Courses

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<tr>
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<th>SBC</th>
<th>Orkney</th>
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### Optional Courses

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Students must study 8 mandatory courses.

Honours degree students must study 8 mandatory courses. Ordinary degree students must study 8 mandatory courses, or transfer to the Mathematics with Computer Science degree to gain more flexibility.

Students must study 8 courses – 3 mandatory and 5 optional. In semester 1 students must choose two Maths (F1) options and one Computer Science (F2) option. An optional course may not run if there is insufficient demand for it; some choices of courses may not be available to students in some years because of timetabling constraints.
Total 4  120

**Stage 5**

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<th>Credits Type</th>
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**ASSESSMENT AND PROGRESSION (UG)**

**Reassessment Opportunities**

1. A student who has been awarded a Grade E or a Grade F in a course may be re-assessed in that course.
2. A student shall be permitted only one re-assessment opportunity to be taken at the Resit diet of examination following the first assessment of the course.
3. A student shall not be re-assessed in any qualifying course taken in the final stage of a course of study.
4. The Progression Board may permit a student to be re-assessed in any qualifying course not taken in the final stage in order to gain credits for the course, provided that the mark or grade obtained in the first assessment of any such course is used in determining the classification of the degree to be awarded.

**Progression Requirements**

**Part A.** The minimum number of credits required to progress through each stage are as follows

<table>
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<tr>
<th>Stage</th>
<th>Minimum Credits</th>
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<tbody>
<tr>
<td>Stage 1 to 2</td>
<td>120 credits (8 courses)</td>
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<tr>
<td>Stage 2 to 3</td>
<td>240 credits (16 courses)</td>
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<td>Stage 3 to 4</td>
<td>360 credits (24 courses)</td>
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<td>Stage 4 to 5</td>
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**Part B.** The minimum grade of D is required in the following courses

**Stage 1**

Progression through the programme for an Honours degree normally requires a minimum of Grade D in F27SA, F27SB & F27SG and the three F1 courses.

Progression through the programme for an Ordinary degree normally requires a minimum of Grade D in at least 5 courses including two F2 courses and two F1 courses.

**Stage 2**

Progression through the programme for an Honours degree normally requires a minimum of Grade D in the three F2 courses and the F18CD, F18CF, F18CE courses.

Progression through the programme for an Ordinary degree normally requires a minimum of Grade D in at least 5 courses including two F2 courses and two F1 courses.

**Stage 3**

Progression through the programme for an Honours degree normally requires an average mark on qualifying courses in both subjects of at least 40%.

**Stage 4**

N/A
### AWARDS, CREDITS AND LEVEL (UG)

#### Part A. Credit Requirements

<table>
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<th>Overall Credits</th>
<th>Specific Requirements</th>
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<tr>
<td>Integrated Masters</td>
<td>600 SCQF credits including a minimum of 120 credit at Level 11</td>
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<tr>
<td>Honours Degree (inc.MA)</td>
<td>480 SCQF credits including a minimum of 180 credit at Level 9 and 10 of which at least 90 credits at Level 10</td>
</tr>
<tr>
<td>Ordinary or General Degree</td>
<td>360 SCQF credits including a minimum of 60 credit at Level 9</td>
</tr>
<tr>
<td>Diploma of Higher Education</td>
<td>240 SCQF credits including a minimum of 90 credit at Level 8</td>
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<tr>
<td>Certificate of Higher Education</td>
<td>120 SCQF credits including a minimum of 90 credit at Level 7</td>
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#### Part B. Mark/Grade Requirements

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<th>Overall Grade</th>
<th>Basis of Overall Mark/Grade</th>
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### DURATION OF STUDY

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