F1B1-MWF Bachelor of Science in Mathematics with Finance

PROGRAMME DETAILS
Programme Code: F1B1-MWF
Department: Mathematics
Main Award: BSCH - Bachelor of Science Honours
Full Award Title: Bachelor of Science in Mathematics with Finance
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
F1B1-MWF BSCH Bachelor of Science in Mathematics with Finance
F1B1-ZZZ BSCO Bachelor of Science in Mathematics with Finance

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, finance and accountancy
• demonstrate a detailed knowledge and understanding in certain specific areas of mathematics and finance
• 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 finance 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 technical manipulation in mathematics and finance
• demonstrate the ability to present rigorous arguments in mathematics and finance
• 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 and mathematical models and finance as currently required in modern industrial sectors, in particular for the finance sector also including including IT, 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 courses 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 finance
- enable students to develop detailed knowledge and critical understanding of both theoretical and applied elements of mathematics and finance
- 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 finance 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 courses and summative assessment at the conclusion of courses both contribute to the overall assessment and are used to formally measure achievement in specified learning outcomes. Understanding, knowledge and subject-specific
F1B1-MWF Bachelor of Science in Mathematics with Finance

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 course descriptors.

PROGRAMME STRUCTURE

Mandatory Courses

<table>
<thead>
<tr>
<th>Edinburgh</th>
<th>SBC</th>
<th>Orkney</th>
<th>Dubai</th>
<th>HWUM</th>
<th>IDL</th>
<th>Coll. Partner</th>
<th>ALP</th>
<th>Other</th>
<th>Stage</th>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>SCQF Cr</th>
<th>SCQF Lvl</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>1</td>
<td>1</td>
<td>C27IE</td>
<td>Introductory Economics</td>
<td>15</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>1</td>
<td>1</td>
<td>F17CA</td>
<td>Calculus A</td>
<td>15</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>1</td>
<td>1</td>
<td>F17CC</td>
<td>Introduction to University Mathematics</td>
<td>15</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>1</td>
<td>1</td>
<td>F77SA</td>
<td>Introduction to Statistical Science A</td>
<td>15</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>1</td>
<td>2</td>
<td>C37FF</td>
<td>Finance and Financial Reporting</td>
<td>15</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>1</td>
<td>2</td>
<td>F17CB</td>
<td>Calculus B</td>
<td>15</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>1</td>
<td>2</td>
<td>F17GA</td>
<td>Problem Solving</td>
<td>15</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>1</td>
<td>2</td>
<td>F77SB</td>
<td>Introduction to Statistical Science B</td>
<td>15</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>2</td>
<td>1</td>
<td>C38FM</td>
<td>Financial Markets Theory</td>
<td>15</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>2</td>
<td>1</td>
<td>F18CD</td>
<td>Multivariable Calculus and Real Analysis A</td>
<td>15</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>2</td>
<td>1</td>
<td>F18CF</td>
<td>Linear Algebra</td>
<td>15</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>2</td>
<td>2</td>
<td>C38FN</td>
<td>Corporate Financial Theory</td>
<td>15</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>2</td>
<td>2</td>
<td>F18CE</td>
<td>Multivariable Calculus and Real Analysis B</td>
<td>15</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>2</td>
<td>2</td>
<td>F18NA</td>
<td>Numerical Analysis A</td>
<td>15</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>2</td>
<td>2</td>
<td>F18PA</td>
<td>Pure Mathematics A</td>
<td>15</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>3</td>
<td>1</td>
<td>C39SM</td>
<td>International Bond and Currency Markets</td>
<td>15</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>3</td>
<td>1</td>
<td>F19GB</td>
<td>Project Preparation</td>
<td>15</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>3</td>
<td>1</td>
<td>F19PL</td>
<td>Abstract Algebra</td>
<td>15</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>3</td>
<td>2</td>
<td>C39SN</td>
<td>Financial Derivatives</td>
<td>15</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>3</td>
<td>2</td>
<td>F19MC</td>
<td>Complex Analysis</td>
<td>15</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>3</td>
<td>2</td>
<td>F19MO</td>
<td>Ordinary Differential Equations</td>
<td>15</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>4</td>
<td>1</td>
<td>C30SX</td>
<td>Risk Management and Derivatives</td>
<td>15</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>4</td>
<td>2</td>
<td>C30SY</td>
<td>Equity Markets and Fund Management</td>
<td>15</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Optional Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>SCQF Cr</th>
<th>SCQF Lvl</th>
</tr>
</thead>
<tbody>
<tr>
<td>F18AC</td>
<td>Financial Reporting</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>F18AA</td>
<td>Applied Mathematics A</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>F18GD</td>
<td>Mathematics for Direct Entrants</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>F19MV</td>
<td>Vector Analysis</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>F19PB</td>
<td>Pure Mathematics B</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>F19AB</td>
<td>Applied Mathematics B</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>F19NB</td>
<td>Numerical Analysis B</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>F10AC</td>
<td>Applied Mathematics C</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>F10AM</td>
<td>Mathematical Biology A</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>F10MF</td>
<td>Functional Analysis</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>F10MM</td>
<td>Optimisation</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>F10NC</td>
<td>Numerical Analysis C</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>F10PC</td>
<td>Pure Mathematics C</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>F10AN</td>
<td>Mathematical Biology B</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>F10MP</td>
<td>Partial Differential Equations</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>F10ND</td>
<td>Numerical Analysis D</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>F10PD</td>
<td>Pure Mathematics D</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>F10PG</td>
<td>Geometry</td>
<td>15</td>
<td>10</td>
</tr>
</tbody>
</table>

### ELECTIVES (UG)

- **Stage 1**: N/A
- **Stage 2**: N/A
- **Stage 3**: Any SCQF Level 7,8,9 course from approved list.

The choice of electives at different stages will be published in the student handbook.

- **Stage 4**: N/A
- **Stage 5**: N/A

### COMPOSITION AND STAGE NOTES (UG)

- **Stage 1**: 8 courses: 8 mandatory
- **Mandatory Credits**: 120
- **Optional Credits**: 1
- **Elective Credits**: 1
- **Total**: 120
### F1B1-MWF Bachelor of Science in Mathematics with Finance

**Stage 2**

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandatory</td>
<td>105</td>
</tr>
<tr>
<td>Optional</td>
<td>15</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>120</td>
</tr>
</tbody>
</table>

8 courses: 7 mandatory, 1 optional

**Stage 3**

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandatory</td>
<td>90</td>
</tr>
<tr>
<td>Optional</td>
<td>30</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>120</td>
</tr>
</tbody>
</table>

8 courses: 6 mandatory, up to 2 optional, up to 2 elective

**Stage 4**

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandatory</td>
<td>45</td>
</tr>
<tr>
<td>Optional</td>
<td>75</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>120</td>
</tr>
</tbody>
</table>

8 courses: 3 mandatory, 5 optional

**Stage 5**

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>0</td>
</tr>
</tbody>
</table>

### 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>
<thead>
<tr>
<th>Stage</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 2</td>
<td>120</td>
</tr>
<tr>
<td>2 to 3</td>
<td>240</td>
</tr>
<tr>
<td>3 to 4</td>
<td>360</td>
</tr>
<tr>
<td>4 to 5</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Part B. The minimum grade of D is required in the following courses

- Stage 1: a minimum of Grade D in at least 6 courses including Finance and Financial Reporting (C37FF), Calculus A (F17CA), Calculus B (F17CB), Algebra A (F17CC) and Problem Solving (F17GA).
Stage 2

a minimum of Grade D in at least 6 courses including Finance Theory and Markets 1 (C38FM), Finance and Theory and Markets 2 (C38FN), Multivariable Calculus and Real Analysis A (F18CD), Multivariable Calculus and Real Analysis B (F18CE), and Linear Algebra (F18CF).

Stage 3

average mark on qualifying courses of at least 40% and an average mark of at least 40% in the seven qualifying courses other than Project Presentation (F19GB), with a minimum Grade D in Securities Markets 1 (C39SM) and Securities Markets 2 (C39SN)

Stage 4

N/A

AWARDS, CREDITS AND LEVEL (UG)

Part A. Credit Requirements

<table>
<thead>
<tr>
<th>Overall Credits</th>
<th>Specific Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated Masters</td>
<td>600 SCQF credits including a minimum of 120 credit at Level 11</td>
</tr>
<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>
</tr>
<tr>
<td>Certificate of Higher Education</td>
<td>120 SCQF credits including a minimum of 90 credit at Level 7</td>
</tr>
</tbody>
</table>

Part B. Mark/Grade Requirements

<table>
<thead>
<tr>
<th>Overall Mark</th>
<th>Overall Grade</th>
<th>Basis of Overall Mark/Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated Masters</td>
<td>&gt;=50%</td>
<td>C</td>
</tr>
<tr>
<td>Honours Degree (inc.MA)</td>
<td>&gt;=40%</td>
<td>D</td>
</tr>
<tr>
<td>Ordinary or General Degree</td>
<td>&gt;=40%</td>
<td>D</td>
</tr>
<tr>
<td>Diploma of Higher Education</td>
<td>&gt;=40%</td>
<td>D</td>
</tr>
<tr>
<td>Certificate of Higher Education</td>
<td>&gt;=40%</td>
<td>D</td>
</tr>
</tbody>
</table>

DURATION OF STUDY

<table>
<thead>
<tr>
<th>IN MONTHS</th>
<th>Full-time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated Masters</td>
<td>60</td>
</tr>
<tr>
<td>Honours Degree</td>
<td>48</td>
</tr>
<tr>
<td>Ordinary or General Degree</td>
<td>36</td>
</tr>
<tr>
<td>Diploma of Higher Education</td>
<td>24</td>
</tr>
<tr>
<td>Certificate of Higher Education</td>
<td>12</td>
</tr>
</tbody>
</table>