Programme Specification

<table>
<thead>
<tr>
<th>Programme award and title:</th>
<th>MSc/PG Dip/PG Cert Computing for Financial Markets</th>
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<tbody>
<tr>
<td>SCQF Level:</td>
<td>M</td>
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<tr>
<td>SCQF Credit Value:</td>
<td>180/120/60</td>
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**Educational aims of the programme:**
Concise (e.g. a few sentences), general statement of aims and broad purposes of the programme

- The banking and financial sectors are heavily dependent on computer systems. Analyses of the stock market or processing of everyday banking transactions are based on computer systems. The specific objectives of the course are to teach financial and economic principles as well as the fundamentals and application of computer technologies underlying banking and financial systems.

**Intended programme learning outcomes:**
Outline (e.g. one or two paragraphs) of what the student will know, understand and be able to do as a result of their learning, expressed in the categories below. Please consider the contribution made to the student’s personal development planning (PDP) and future employability.

**Knowledge and understanding**
- The operational principles of computers
- the operational principles of computer networks,
- the importance of systematic software design methodology, and the ability to model, design and implement software systems,
- the principles and practice of server and client side Web scripting, and the ability to design and implement computer applications and web-based applications,
- the principles and practice of information storage, management and processing including its central place in the support of decision making,
- the impact of legislation on their professional work,
- the environments in which software is developed and used,
- the key financial decisions made by companies and their use of the equity and bond markets to raise finance,
- the main derivative financial products, how they are priced and how they are used by companies and financial institutions to manage risk,
- the functions and participants of the financial markets,
- the decision making under uncertainty,
- the international dimension of the financial system.

**Subject-specific skills and other attributes**
- produce work involving problem specification, analysis, design and implementation of software systems and an understanding of the environments in which software is being developed and used,
- prepare technical documentation and prepare and give technical presentations,
- use and develop validation and testing procedures for computer-based systems,
- show effective judgement in the choice and use of tools and techniques.
- develop spreadsheets and apply econometric techniques to analyse corporate performance and identify trends in financial markets.

**Generic skills (e.g. information skills, communication skills, critical, analytical and problem solving abilities) and other attributes**
- integrate the material taught and to apply it to a large loosely-specified task (Masters Degree Programme only)
- apply appropriate practices within a professional and ethical framework,
- organise and manage their time and prioritise workloads,
- communicate effectively, both orally and in writing,

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- reflect on and assess their professional development,
- work as a member of a team, recognising the different roles within a team and different ways of organising teams,
- integrate the material taught and to apply it to a large loosely-specified task (Masters Degree Programme only)
- critically analyse concepts, principles and practice, in the context of loosely defined scenarios,
- bring effective approaches to bear in solving problems,
- evaluate and understand requirements and specifications

### Learning, teaching and assessment strategies:

Outline (e.g. one or two paragraphs) on overall approach taken to develop and assess learning outcomes, including any distinctive features

The teaching methods used are lectures, tutorials and practical laboratory sessions. The different modules making up the degree use these in differing ways: they need to be selected appropriately for the different modules. This is achieved partly by the lecturer in charge of each module selecting what is in their opinion appropriate, and these decisions are reviewed regularly by the curriculum committee, and by the subject committee.

Students may exit the course either at the end of the 2nd semester, with a Postgraduate Diploma in Advanced Computing, or they may (if they wish) continue to do a project over the summer. Passing this project enables them to graduate with an M.Sc. in Computing for Financial Markets.

Assessment techniques used are practical assignments, reports/essays, examinations, and, for the project, a project dissertation. A random sample of all items of assessed work is reviewed by a member of staff not involved in the teaching of the module. For the MSc project, all pieces of assessment are marked independently by two members of staff. Communication skills are developed through coursework reports and project demonstrations.

Practical assignments are used extensively particularly on modules that have a major computer programming component. This is the only realistic method for providing formative feedback to students in this area of work. Practical work is also important in modules where software design is a major element. In the module on object-oriented modelling, students complete a design assignment in teams of four or five students. This provides a valuable introduction to professional working practices.

Examinations are used as a summative assessment (though we also use the marks gained in earlier practical assignments and essays to produce final grades in each course). The summer project is assessed by means of the project dissertation. Students also have to demonstrate their project to the staff assessing the project. In order to gain an M.Sc. degree, the student must pass the project.

As can be seen from the above, students are enabled to demonstrate achievement through their practical work, and through their performance in examination. The practical work is set in such a way that the more able students are able to demonstrate their abilities while the less able students are not disadvantaged. This is achieved by making it clear what is required in order to achieve different levels of grade in the practical work.

Both the examinations and the assessments are designed to test the students’ ability to exercise critical analysis and judgement. The computing programming skills are initially taught in the first semester which are reinforced with a larger programming task in the winter assignment, and this knowledge is deepened in the second semester, and (for those proceeding to the M.Sc.) used in a practical context in the project. This project also covers the use of appropriate practices in a professional framework.

Working as part of a team is assessed through the use of a group project in object modelling. For the Masters degree, the project tests the students’ ability to integrate the material taught and to apply it to a large loosely-specified task requiring the identification and analysis of a problem, the investigation and critical analysis of previous similar and related work, the design of a solution, and a critical assessment of the achievements of the project. The project may be concentrating on any of the three subjects and indeed may require skills and knowledge in more than one subject, e.g. Computing and Finance.

| Professional/statutory body accreditation or recognition: | not accredited yet |
Further details:

Entry requirements: [http://www.external.stir.ac.uk/postgrad/index.php](http://www.external.stir.ac.uk/postgrad/index.php)

Programme structure: [http://www.calendar.stir.ac.uk/](http://www.calendar.stir.ac.uk/)

Relevant Subject Benchmark statement (if applicable): [http://www.qaa.ac.uk/academicinfrastructure/benchmark/default.asp](http://www.qaa.ac.uk/academicinfrastructure/benchmark/default.asp)


Introduction/revision date: Autumn 2008