### Course Codes
F2TM-INT/F2TD-INT/F2TC-INT

### Course Title
Computing

### School/Institute
Mathematical & Computer Sciences

### Type
Graduate/Postgraduate

### Awards
MSc, PG Diploma, PG Certificate

### Course Accredited by

### QAA Subject Benchmarking Group(s)
Computing

### Date of Production/Revision
11 May 2009/version 1

### Composition

#### 9 mandatory modules (including a project/dissertation)

<table>
<thead>
<tr>
<th>Module Code &amp; Title</th>
<th>Effort Hours</th>
</tr>
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<tbody>
<tr>
<td>F21DF Databases and Information Systems</td>
<td>150</td>
</tr>
<tr>
<td>F21MC Mobile Communications &amp; Programming</td>
<td>150</td>
</tr>
<tr>
<td>F21SF Software Engineering Foundations</td>
<td>150</td>
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<tr>
<td>F21SC Systems Programming &amp; Scripting</td>
<td>150</td>
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<tr>
<td>F21AS Advanced Software Engineering</td>
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<td>F21NA Network Applications</td>
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<td>F21SE Systems Management &amp; Security</td>
<td>150</td>
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<tr>
<td>F21MP Masters Dissertation Project (M)</td>
<td>600</td>
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### Mode and Location of Study
**Full-time** □ **Part-time** □

- Home Campus □ Other Campus □ (specify) ..................................
- Collaborative Partner □ Approved Learning Partner □

### Mode of Delivery

- Conventional □ Blended □ Independent □

### Level of Modules

- Level 11 □ Levels 7-10 (UG) □ Mixed □

### Duration of Study (months)

<table>
<thead>
<tr>
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<th>Standard</th>
<th>Maximum</th>
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<tr>
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<td>Full-time</td>
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<tr>
<td>Masters</td>
<td>12</td>
<td>24</td>
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<tr>
<td>Diploma</td>
<td>9</td>
<td>21</td>
</tr>
<tr>
<td>Certificate</td>
<td>9</td>
<td>21</td>
</tr>
</tbody>
</table>

### Collaborative/Approved Learning Partner Course

- Frederick Institute of Technology, Cyprus
- ICTEC, Iran
### Course Notes

1. **Nominal Pass Mark/Grade**
   - Masters: 50%
   - Diploma: 40%
   - Certificate: 40%

2. **Summary of Assessment Methods**
   - Modules on the course may be assessed by coursework only, or by a mixture of coursework and examination.
   - For modules assessed by an examination, an explicit summative assessment is held at the end of the relevant Semester. This is weighted with any coursework mark to provide a final module mark. There is a nominal pass mark on a module basis. However, assessment marks are averaged for progression purposes.
   - For modules assessed by coursework only (including the project modules), summative assessment within and at the end of the module will provide a mark and grade.

3. **Re-assessment Opportunities**
   Students are offered standard reassessment opportunities in a maximum of three modules where they have achieved a grade of less than D. This reassessment will take place at the next opportunity which will either be during the MSc resit exam period in mid August or the following year. The Exam Board may, in exceptional circumstances, choose to offer a student an opportunity to retake some or all of their assessments as first opportunities at the next opportunity. There is no re-assessment opportunity for the dissertation.

4. **Award Criteria**

<table>
<thead>
<tr>
<th>Number of Module Passes</th>
<th>Overall Mark/Grade</th>
<th>Basis of Overall Mark/Grade</th>
<th>Other Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Master (Distinction):</td>
<td>9</td>
<td>70%</td>
<td>70% required both in taught modules (average) and in dissertation. Research Methods is treated as a taught module</td>
</tr>
<tr>
<td>• Master:</td>
<td>9</td>
<td>50%</td>
<td>50% required in taught and dissertation, allowing 5% compensation between these.</td>
</tr>
<tr>
<td>• Diploma (Distinction):</td>
<td>8</td>
<td>70%</td>
<td>70% average across all modules.</td>
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<tr>
<td>• Diploma:</td>
<td>8</td>
<td>40%</td>
<td>40% average across all modules.</td>
</tr>
<tr>
<td>• Certificate:</td>
<td>4</td>
<td>40%</td>
<td>40% average across all modules</td>
</tr>
</tbody>
</table>

5. **Module Choice/Dissertation**

Students must take the eight mandatory taught modules.

The Masters dissertation counts as 600 effort hours. Students may only progress if they have met the progression requirements (taught module average of 45% or better and all modules at Grade E or above and 45% or better on F21RP). Students select a dissertation title in Semester 2, either internally from a list generated by the academic staff, by personally generating a topic and agreeing this with an academic supervisor, or externally with an industrial placement agreed with their Course Director. Detailed guidelines on the conduct of the project and the production of the dissertation project are provided to the student, together with guidance on the level of support that they can expect to receive from their academic supervisor. Dissertation marks are awarded with 90% of the marks coming from the dissertation itself, and 10% of the marks coming...
Dissertation marking is a two phase process – the academic supervisor provides a mark based predominantly on the project, in terms of technical quality, level of work undertaken, level of independence and responsibility of the student, with 25% of the marks being based on the quality of the dissertation document – the second reader concentrates primarily on the dissertation document, quality, style, accuracy, honesty, completeness, academic rigour, referencing, etc., with 25% of their marks being assigned to the technical quality of the project and level of work undertaken, as evidenced from the document. Once these marks have been produced, if they are within an acceptable range of one another (that range being determined by the Postgraduate Board of Studies and agreed with the External Examiner) then the marks are averaged to produce a single dissertation mark.

If the marks difference is outside the range specified, and the academic markers state there is not enough flexibility in their marks to overcome this problem, or the mark thus generated would affect the level of award achieved by the student, then a third reader will be introduced. The third reader marks to the same criteria as the second reader, as the dissertation document is regarded as the major academic instrument of record, and the mark produced by the third reader will be averaged with the original marks to produce the single dissertation mark. In all situations where a third reader is introduced the details of the marking process will be presented to the External Examiner at the Exam Board and, especially where the level of award for the student is affected, the External Examiner will be given the opportunity to review the dissertation document and comment specifically on the marking process and the appropriateness of the outcome.

### Additional Information

All additional information relating to the course can be found in the School Postgraduate Handbook and the Course handbook, both of which are available to students online through Information for Current Postgraduate students on the Computer Science website.

*The accompanying Course Description provides details of aims, outcomes, teaching & learning and assessment policies for the course. Details of individual modules are provided in the appropriate Module Descriptors.*
# 10. Educational Aims of the Course

The aims of this course reflect the aims of the whole Computer Science PGT Programme. Specifically this course is concerned with the use and application of Computing in the specification, design, development and deployment of software applications and IT systems. The aims are to enable the students to:

- Develop detailed knowledge and critical understanding of the main areas of computing and information technology including theories, principles and concepts.
- Develop and use a significant range of principal and specialist skills, techniques and practices in the domain of computing and information technology.
- Critically review existing practice and develop original and creative solutions to problems within the domain.
- Communicate and work effectively with peers and academic staff in a variety of tasks, demonstrating appropriate levels of autonomy and responsibility.
- Plan and execute a significant project of research, investigation or development in a specialist area within computing and information technology, demonstrating extensive, detailed and critical understanding of that specialism.
### 11. The Course provides opportunities for learners to achieve the following outcomes:

#### Subject Mastery

**Understanding, Knowledge and Cognitive Skills**
- Critical understanding of the principal theories, principles and concepts relating to the use of computing and IT in general and extensive, detailed and critical understanding of several specialist areas within that domain.
- Understanding and use of a significant range of the principal skills, techniques and practices in computing and information technology, and a range of specialised skills, research and investigation techniques, and practices informed by leading-edge research and development.
- Application-based knowledge and skills relating to the broad range of activities within the computing and information technology domain, and extensive and detailed knowledge and understanding of mainstream and specialist areas within that domain, in particular computer security, databases, IT systems management, mobile networking, network applications, scripting and software engineering.
- Fundamental knowledge and skills in the software engineering life-cycle, incorporating specification, design, development and deployment of software systems, and critical understanding of the range of tools and techniques available to support this process.
- Extensive and detailed knowledge of structured programming concepts and techniques, with advanced and specialist applicative skills in at least one object oriented programming language.

**Scholarship, Enquiry and Research**
- Research skills, and the capability of critical analysis, through review and analysis of current research literature.
- An understanding of research ethics, and how to appropriately build on the work of others.

#### Personal Abilities

**Industrial, Commercial and Professional Practice**
- Demonstrate critical awareness of current legal, social, ethical and professional issues within the discipline.
- Make informed judgements with incomplete or inconsistent data, or where there are no professional or ethical codes or practices for guidance.

**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.

**Communication, Numeracy and ICT**
- 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.
- Develop and demonstrate critical knowledge and skills in the planning and usage of software tools and numerical techniques to develop, present and communicate information on projects and processes.
12. Approaches to Teaching and Learning:

This course is offered in a flexible learning format, with materials available to support learning off-campus. Students can be registered with an Approved Learning Partner (ALP), who provide tutorial and laboratory support. Tutors at the ALP have the backup of on-campus staff. Independent Web Learners have support from the on-campus staff. The flexible learning materials provide the core module teaching material, while also providing pointers to further resources, and a wide variety of exercises designed to support both conceptual learning and skill development. The ALP provides the academic supervisor for the dissertation while on-campus staff second read the dissertation.

Students complete coursework in line with their on-campus counterparts, and this is marked by on-campus staff. Students may be expected to complete coursework in groups, teams and pairs, as well as individually, where appropriate, and modules offer a range of types of coursework for assessment, from discursive essay-style assignments to code design and generation. Electronic support, in the form of email lists, newsgroups and bulletin boards are used to disseminate information and support student communication and practice.

13. Assessment Policies:

Postgraduate courses consist of two phases:

♦ A taught phase, consisting of a set of 8 taught modules defined in the course 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 two stages: a project dissertation report, and a poster and demonstration-based presentation.

♦ Students will normally complete the taught phase, at which point progression to the dissertation phase is dependent on assessed performance. To progress students must meet the criteria stipulated in point 9 below in the taught material.

♦ Students meeting the required standards for Masters in the taught phase (set out in point 9 below) will be permitted to progress to the dissertation phase.

♦ Students meeting the required standards for Postgraduate Diploma and Postgraduate Certificate (set out in point 9 below) 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 (set out in point 9 below) in coursework and examination in the taught phase will not be permitted to progress to the dissertation phase, nor will they be eligible for any award.

♦ Any student will be able to retake the assessment of up to a maximum of 3 modules 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 course or for progression. Students may only resit modules for which their examination grade is E or F. The method of reassessment for each module is specified in the appropriate module descriptor.

♦ In any circumstance which it deems to be exceptional the Exam Board has the discretion to permit student progress or award, irrespective of student performance against required standards and policies.
1. To obtain an MSc Degree, candidates must gain 180 credits and must satisfy the examiners by achieving the required standards (set out in point 9 below) in two components:
   - Assessed taught material
   - Dissertation (set out in point 9 below)
2. To obtain a Postgraduate Diploma candidates must gain 120 credits and must satisfy the examiners by achieving the required standards (set out in point 9 below) in the assessed taught material.
3. To obtain a Postgraduate Certificate candidates must gain 60 credits and must satisfy the examiners by achieving the required standards (set out in point 9 below) in one component:
   - Assessed taught material
   - The Examiners may specify certain modules as mandatory to achieve the award of Postgraduate Certificate, to properly reflect the nature of the course.
4. Taught modules will be assessed by a variety of techniques appropriate to the learning outcomes of the specific module. Where a module is assessed by more than one component (for example examination and coursework or more than one item of coursework) students must complete each element of the assessment to a satisfactory level (Grade E or higher) to be permitted to proceed.
5. All course work must be submitted before the due date. Late submissions will only be accepted with the prior permission of the Course Director.
6. In exceptional personal or medical circumstances students may be granted leave by the examiners to resit part or all of the assessment on one occasion only and at a date decided by the examiners, as stated in university regulations 4 and 5. This provision is in addition to the provision that students may retake assessment for modules in which they have achieved a grade less than D.
7. Dissertations must be submitted on or before the publicised submission date; dissertations submitted after that date and without the prior consent of the Course Director may be assessed at a penalty.
8. Allowance for poor performance in or non-submission of a component on medical grounds is normally made only where supported by written testimony from a professional health practitioner. Such testimony must be lodged with the Course Director prior to the Examination Board meeting.
9. The level of achievement expected in each component is an average of:
   - 40% for the Postgraduate Diploma and Certificate
   - 50% for the MSc Degree
   - Candidates displaying exceptional merit by obtaining an average of 70% or more in each component may be recommended for the award of MSc with Distinction, the award being subject to the discretion of the Exam Board.
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### Required Standards:

Candidates must achieve the following minimum levels of performance in:

**Assessed Taught Material**
- An average across the 8 modules of 50% or better for Masters, with F21RP Research Methods at 45% or above and all others at grade E or above.
- An average across the 8 courses of 40% or better for Postgraduate Diploma (120 credits) or an average across 4 courses of 40% or better for Postgraduate Certificate (60 credits), with no course returning a result of less than grade E.
- All elements of assessment for each module must be completed to a satisfactory level (Grade E).
- Performance in the assessed taught material may be compensated for Masters, within a 5% range, at the discretion of the Exam Board, by dissertation performance.

**Dissertation**
- An average of 50% or better for Masters
- Dissertation performance may be compensated for Masters, within a 5% range, at the discretion of the Exam Board, by performance in the assessed taught material
- The Dissertation is conducted in two stages, these being:
  - Stage 1: A write up in a dissertation report (90%)
  - Stage 2: A poster presentation and demonstration of the project work and results (10%)

The accompanying Course Structure template provides details of modules, awards and credits for the course.

The accompanying Course Notes provide details of stage notes, progression requirements and award requirements for the course.