### 1. Programme title and designation

<table>
<thead>
<tr>
<th>Award</th>
<th>Title</th>
<th>Credit Value</th>
<th>ECTS equivalent</th>
<th>Any special criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSc</td>
<td>Advanced Software Engineering</td>
<td>180</td>
<td>90</td>
<td>The award of an MSc degree is conditional on the student passing at least 90 credits worth of taught Computer Science modules.</td>
</tr>
<tr>
<td>MSc</td>
<td>Advanced Software Engineering with Management</td>
<td>180</td>
<td>90</td>
<td>The award of an MSc degree is conditional on the student passing at least 75 credits worth of taught Computer Science modules and 15 credits worth of Management modules.</td>
</tr>
</tbody>
</table>

### 2. Final award

<table>
<thead>
<tr>
<th>Award</th>
<th>Title</th>
<th>Credit Value</th>
<th>ECTS equivalent</th>
<th>Any special criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSc</td>
<td>Advanced Software Engineering</td>
<td>180</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>MSc</td>
<td>Advanced Software Engineering with Management</td>
<td>180</td>
<td>90</td>
<td></td>
</tr>
</tbody>
</table>

### 3. Nested awards

<table>
<thead>
<tr>
<th>Award</th>
<th>Title</th>
<th>Credit Value</th>
<th>ECTS equivalent</th>
<th>Any special criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

### 4. Exit awards

<table>
<thead>
<tr>
<th>Award</th>
<th>Title</th>
<th>Credit Value</th>
<th>ECTS equivalent</th>
<th>Any special criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postgraduate Certificate</td>
<td>Informatics</td>
<td>60</td>
<td>30</td>
<td>Students must pass at least 90 credits worth of taught Computer Science modules.</td>
</tr>
<tr>
<td>Postgraduate Diploma</td>
<td>Advanced Software Engineering</td>
<td>120</td>
<td>60</td>
<td>Students must pass at least 90 credits worth of taught Computer Science modules.</td>
</tr>
<tr>
<td>Postgraduate Diploma</td>
<td>Advanced Software Engineering with Management</td>
<td>120</td>
<td>60</td>
<td>Students must pass at least 75 credits worth of taught Computer Science modules and 15 credits worth of Management modules.</td>
</tr>
</tbody>
</table>

### 5. Level in the qualifications framework

M

### 6. Attendance

<table>
<thead>
<tr>
<th>Mode of attendance</th>
<th>Full-time</th>
<th>Part-time</th>
<th>Distance learning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>✓</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Minimum length of programme: 1

Maximum length of programme: 6
9. Proposing department

Department of Informatics

10. Programme organiser and contact

Details

Dr Michael Spratling
Director of Studies
Email: michael.spratling@kcl.ac.uk
Ext: 2027

11. UCAS code (if appropriate)

N/A

12. Relevant QAA subject benchmark/

professional and statutory body guidelines

N/A

13. Date of production of specification

24 November 2006 (updated for CF)

14. Date of programme review

2019/2020

16. Educational aims of the programme

• Equip students with systematic knowledge and experience of the theoretical foundations and practice of computing at an advanced level, so that they may be able to pursue professional careers and/or further research successfully.
• Equip students so that they may demonstrate originality in the application of knowledge and a thorough understanding of how established research techniques can be used to create and interpret knowledge in computing.
• Enable students to evaluate critically current research and the methodologies that are used to pose and explore new hypotheses.
• Offer BSc graduates opportunities to develop further analytical and practical transferable skills and prepare them to play a creative and leading role in the professional and research community.
• Develop students’ critical awareness and appreciation of the changing role of information technology in society and motivate them to pursue continual professional development and further research.
• Ensure that students acquire an understanding of their professional and ethical responsibilities and of the impact of computing technologies in a wide and varied range of contexts.

17. Educational objectives of the programme/programme outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding and skills in the following areas:

Knowledge and understanding

These are achieved through the following teaching/learning methods and strategies:

Acquisition of these is through a combination of lectures, tutorials, supervised laboratory classes, coursework, individual and group projects.

Assessment:
Coursework, written examinations, assessed group and individual projects. The latter include assessment of written reports, software demonstrations and oral presentations.

PAF Originally Approved by QA&AA: 26 June 2007
PAF modified by ASQ re: exit awards: 30th April 2010
PAF finalised for 2010/11: 18 October 2010
PAF modified by QAS for 2011/12: 23rd August 2011
PAF finalised for 2012/13: 6 September 2012
PAF finalised for 2013/14: 19 November 2013
PAF modified re: pathway: 3 June 2014
PAF finalised for 2014/15: October 2014
6. In-depth knowledge on the following modern information technology subjects: software measurement and testing, software architecture, program analysis and verification, distributed computing, Internet technology, databases, agent technologies related to e-commerce, software engineering for the internet and safety critical systems.
7. Management techniques that are relevant to software engineering.
8. The professional and ethical responsibilities of software engineers.
The role of the software engineer in the development and application of computing technology and solutions in a global context.

Skills and other attributes

Intellectual skills:
1. Plan, conduct and report a programme of original research.
2. Analyse critically and solve computing problems.
3. Design a system, component or process to meet a need.
4. Be creative in the solution of problems and in the development of designs.
5. Evaluate designs, processes and products critically, and make improvements.
6. Integrate and evaluate information and data from a variety of sources.
7. Take a holistic approach in solving problems and designing systems, applying professional judgements to balance risks, costs, benefits, safety, reliability, aesthetics and environmental impact.
8. Make decisions in complex and unpredictable situations.
9. Be self-directed and original in solving problems, and act autonomously in undertaking research.

These are achieved through the following teaching/learning methods and strategies:

Intellectual skills are developed through a combination of lectures, tutorials, supervised laboratory classes, coursework, individual and group projects.

Analysis, design and problem solving skills are further developed through coursework, laboratories, tutorials and supervision of project work.

Decision making skills and independent exercise of judgement are particularly developed through the group project and the individual project.

Assessment:
Analysis and problem solving skills are assessed through unseen written examinations and coursework.
Research and design skills are assessed through laboratory work, coursework reports, project reports and presentations and active participation in an “Advanced research topics” colloquium (an optional element of the programme).

Practical skills:

These are achieved through the following teaching/learning methods and strategies:

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Programme approval 2006/07

1. Specification, design and implementation of computer-based systems.
2. Evaluation of systems and design trade-offs.
3. Identification and definition of research ideas.
4. Effective contribution to development teamwork.
5. Effective group organisation and leadership.
6. Preparation of technical presentations.
7. Production of technical reports and documentation.
8. Giving oral presentations.
9. Effective use of the scientific literature.
10. Effective note-taking.
11. Effective use of computational tools and packages.

Practical skills are developed through a combination of lectures, tutorials, supervised laboratory classes, coursework, individual and group projects.

Assessment:
Practical skills are assessed through coursework reports and individual and group project reports and presentations. Skill 10 is not explicitly assessed.

Generic/transferable skills:

1. Communicate effectively (in writing, verbally and through diagrams and graphs) with specialist and non-specialist audiences.
2. Apply mathematical skills (logic, geometry, modelling, discrete mathematics).
3. Work as a member of a team and lead a team.
4. Transfer techniques and solutions from one problem domain to another.
5. Use information technology.
6. Retrieve information using catalogues and search engines.
7. Manage resources and time.
8. Learn independently in familiar and unfamiliar situations with open-mindedness and in the spirit of critical enquiry.
9. Learn effectively for the purpose of continuing professional development and further research in a wider context throughout their career.
10. Make decisions in complex and unpredictable situations.
11. Exercise initiative and personal responsibility.

These are achieved through the following teaching/learning methods and strategies:
Transferable skills are developed through a combination of lectures, tutorials, small group supervision, supervised laboratory classes, coursework, individual and group projects throughout the year of the programme.
Skills 7, 8, 9, 11 are developed through most of the curriculum.
Skill 2 is taught through lectures and coursework.
Skill 3 is developed through group project work.
Skills 4, 5, 6, 7, 8, 9, 10, 11 are developed mostly through group and individual project work.

Assessment:
Skill 1 is assessed through coursework reports, presentations and oral and written examinations.
Skill 2 is assessed primarily through examinations, coursework and project work.
Skill 3 is assessed in the context of the group project.
Skills 4, 7 and 8 (in part), 10 and 11 are assessed mostly in the context of the individual project. The other skills are not formally assessed.

18. Statement of how the programme has been informed by the relevant subject benchmark statement(s)/professional, regulatory and statutory body guidelines

N/A

19. Programme structure and award requirements (where relevant the information should also differentiate the particular requirements of pathways within a programme or nested/exit awards)

For full details of the modules to be taken, please consult the Student Handbook

(a) numbers of introductory, core, compulsory and optional modules to be taken in each year of the programme with related credit values

For MSc in Advanced Software Engineering, the project (60 credits) is core, 3 modules (45 credits) are compulsory, and 5 modules (75 credits) are optional.
For MSc in Advanced Software Engineering with Management, the project (60 credits) is core, 5 modules (75 credits) are compulsory, 3 modules (45 credits) are optional.

(b) range of credit levels permitted within the programme

Level 7 only.

(c) maximum number of credits permitted at the lowest level

N/A

(d) minimum number of credits required at the highest level

180 for MSc
120 for PGDip

(e) progression and award requirements (if different from the standard)

The award of an MSc degree is conditional on the student satisfying the credit framework requirements for award. In addition, to be awarded the MSc in Advanced Software Engineering, a student must pass at least 90 credits worth of taught Computer Science modules and to be awarded the MSc in Advanced Software Engineering with Management, a student must pass at least 75 credits worth of taught Computer Science modules and 15 credits worth of Management modules.

To be awarded PGDip, in addition to satisfying credit framework requirements for this award. In addition, to be awarded the PGDip in Advanced Software Engineering, a student must pass at least 90 credits worth of Computer Science modules and to be awarded the PGDip in Advanced Software Engineering with Management, a student must pass at least 75 credits worth of Computer Science modules and 15 credits worth of Management modules.

(f) maximum number of credits permitted with a condoned fail (core modules excluded)

30 credits.
Condoned fails are permitted, at the discretion of the Assessment Board, for marks in the range of 1-49%.
(g) are students permitted to take a substitute module, as per regulation A3, 20.7?
Yes

(h) other relevant information to explain the programme structure
Where a student cannot take a module within the programme, including core and compulsory modules, in order to comply with regulation A3, 5.7:

Unless the programme specification makes explicit provision as part of the requirements for reassessment, a student may not enrol on a module that the student has already taken and passed at either undergraduate or postgraduate level. Neither may a student enrol for a module that overlaps with another module that the student has already taken and passed. Modules will be deemed to overlap if both the content and the level of complexity of the two modules are similar. The affected module will be replaced by an appropriate alternative following the guidance of an appropriate academic, usually the programme leader.

To decide whether the special criteria for passing the programme have been met, the modules 7CCSMPMT Principles of Management and 7CCSMPRO Project Management are deemed to be “Management modules”, and all other modules permitted by the programme specifications are deemed to be “Computer Science modules.

For the MSc or PGDip in Advanced Software Engineering or Advanced Software Engineering with Management, all students study:
- 7CCSMASE Advanced Software Engineering
- 7CCSMDAS Software Design and Architecture
- 7CCSMGRP Group Project

Students enrolled in the MSc/PGDip in Advanced Software Engineering must not take any of the management modules.

For the MSc or PGDip in Advanced Software Engineering with Management, all students also study:
- 7CCSMPMT Principles of Management
- 7CCSMPRO Project Management
20. Marking criteria

The marking follows the College generic criteria and additionally those of the Faculty of Natural and Mathematical Sciences.