

**PROGRAMME SPECIFICATION  
(2012-13)**

<b>Programme Title</b>	Software Engineering
<b>UCAS/JACS Code</b>	G600
<b>School/Subject Area</b>	EAS/Computer Science
<b>Final Award</b>	MSc
<b>Interim Awards</b>	Postgraduate Diploma (120 credits) and Postgraduate Certificate (60 credits)
<b>Mode(s) of Study</b>	FT, PT
<b>Normal Length of Program</b>	FT: 12 months PT: 24 months minimum, up to 3 years allowed by the University
<b>Total Credits</b>	180
<b>Programme Accredited By</b>	N/A
<b>Dates Program Specification Written and Revised</b>	27 January 2011, 20 April 2012

<b>Education Aims of the Programme</b>	<p>To enable students to develop a systematic understanding of the software development process.</p> <p>To support students in developing the expertise to:  conduct requirements analysis and specification,  create and evaluate software architecture and design solutions,  develop dependable software units,  verify software systems and make informed decisions in the management of software projects,  which are all key to a professional software engineering career.</p> <p>To equip graduates with the essential knowledge for development and maintenance of large-scale software systems, and with the ability to apply this knowledge to real-world applications.</p> <p>To provide deep knowledge of object-oriented analysis and design, making use of UML-based techniques.</p> <p>To develop an understanding of the management issues involved in creating software systems, and of how they can be addressed from the viewpoint of the organisation, the software developers and the end-users.</p> <p>To provide practical experience of a substantial software development project from the initial analysis of a problem, through design and planning, implementation, testing, evaluation and documentation.</p> <p>Successful completion of this MSc programme is expected to lead to a professional career in Software Engineering.</p>
<b>Relevant Subject Benchmark Statements and other External and Internal Reference Points used to inform programme outcomes</b>	<p>QAA Framework for Higher Education  IEEE Computer Societys Software Engineering Body of Knowledge (SWEBOK)</p> <p>Quality Assurance Agency for Higher Education subject benchmark statement for Computing  Professional approval requirements of the British Computer Society  Towards Benchmarking Standards for Taught Postgraduate Masters Courses in Computing Council of Professors and Heads of Computing (CHPC)</p>

<b>Programme Structures and Requirements: Levels, Modules and Credits Stage F (inc. Placement)</b>				
<b>Module Title</b>	<b>Credits</b>	<b>Level</b>	<b>Module Code</b>	<b>Core</b>
Information Security	15	7	CS4520	YES
Diploma project	20	7	CS4600	NO
Interaction design	15	7	CS4650	NO
Advanced Human Computer Interaction	15	7	CS4655	NO
Software Process and Management	20	7	CS4670	YES
Professional Skills in Computing	10	7	CS4680	YES
Major project	80	7	CS4800	YES
Reliability in Software Engineering	15	7	CS4820	YES
Requirements engineering	10	7	CS4830	YES
Software architecture	15	7	CS4840	YES
<b>TOTAL</b>	180			

## Programme Outcomes, Learning and Teaching and Assessment Strategies

### Knowledge and Understanding

On successful completion of their programme students, are expected to have knowledge and understanding of:		Learning, Teaching and Assessment Strategies to enable outcomes to be achieved and demonstrated	
		Learning and Teaching Methods	Assessment Methods
1	The principles and practices of software architecture	Lectures, tutorials, case studies, seminars, practical sessions, independent reading, project work.	Written examinations, coursework assignments, project dissertation and oral examination
2	The factors affecting the success of a software development project		
3	The structure and application of a software process and the use of appropriate tools and techniques		
4	The principles of object oriented software construction		
5	Key characteristics and principles of interaction design and the potential for developing interaction design in real-world systems		
6	The security context in building modern distributed systems and emerging security techniques		

<b>Intellectual Skills</b>			
	<b>On successful completion of their programme students, are expected to have knowledge and understanding of:</b>	<b>Learning, Teaching and Assessment Strategies to enable outcomes to be achieved and demonstrated</b>	
		<b>Learning and Teaching Methods</b>	
		<b>Assessment Methods</b>	
1	Investigate and critically assess published work for its professional and academic worth	Intellectual skills are developed through formal lectures, tutorial classes and practical work associated with taught modules. Project work includes literature search combined with a critical evaluation of the material, and develops general problem solving and critical evaluation skills.	Project dissertation, oral presentations, coursework assignments and examinations.
2	Successfully undertake critical evaluation and systematic written exposition		
3	Integrate and apply knowledge and methods from a variety of sources.		
4	Plan, organise and document substantial professional work.		
5	Analyse requirements of software applications and develop well-designed solutions.		
6	Effectively design and analyse software architectures		

<b>Professional Skills</b>			
	<b>On successful completion of their programme students, are expected to have knowledge and understanding of:</b>	<b>Learning, Teaching and Assessment Strategies to enable outcomes to be achieved and demonstrated</b>	
		<b>Learning and Teaching Methods</b>	<b>Assessment Methods</b>
1	Apply appropriate methods to design the architecture of large and complex software systems	Lectures, tutorials, case studies, practical work	Written examinations, coursework, project dissertation and oral presentations
2	Use an appropriate programming language to develop quality-based software systems using a variety of software tools and technologies		
3	Prepare technical reports and presentations		
4	Apply problem-solving and analytical skills		
5	Use appropriate software testing techniques for reliable software engineering		

<b>Transferable Skills</b>			
	<b>On successful completion of their programme students, are expected to have knowledge and understanding of:</b>	<b>Learning, Teaching and Assessment Strategies to enable outcomes to be achieved and demonstrated</b>	
		<b>Learning and Teaching Methods</b>	<b>Assessment Methods</b>
1	The ability to communicate technical issues in an effective manner, both in written format and orally	The course will significantly enhance and add to the transferable skills acquired by students from the previous completion of an honours degree: oral presentation, group tutorial work, presentation of reports, and the effective management of time to meet a schedule of deliverables	Coursework assignments, project reports, oral presentation of project and other work
2	Information acquisition and analysis skills		
3	Effective project and time management		
4	An independent learning ability, required for continuing professional development		
5	The ability to work independently as well as a member of a team		

<b>Entry Requirements</b>	<p><b>Direct Entry</b>  BSc Honours in Computer Science or an alternative with substantial computing content with at least grade 2:2 (or equivalent)</p> <p><b>English Language Requirements (for candidates whose first language is not English):</b></p> <ul style="list-style-type: none"> <li>• A TOEFL score of at least 600 (paper-based) or 250 (computer-based) or 100 (internet-based with a minimum score of 23 in speaking and 20 in all other bands).</li> <li>• An IELTS score of 6.5 overall with no less than 5.5 in each band.</li> </ul>
<b>Programme Regulations</b>	<p><b>ATTENDANCE</b></p> <p>For the full-time attendance mode on the Master of Science Degree, students are normally required to attend the University for a period of twelve months, i.e., one complete academic year. For the Postgraduate Diploma or Postgraduate Certificate, students are normally required to attend the University for a period of nine months within one academic year. For the part-time attendance mode, the attendance will be individually negotiated to amount to the equivalent of twelve months, normally within 2-3 years, but not exceeding 5 years.</p>

This specification provides a concise summary of the main features of the programme and the threshold learning outcomes that a student might normally be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. **The individual modules included in the programme may differ from those included in this programme specification as our programmes are subject to continuous review.** Information on admissions requirements and career opportunities is available in the relevant prospectus. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each module can be found in the appropriate module guides and programme handbook(s) which are available to students on enrolment.