

**PROGRAMME SPECIFICATION  
(2012-13)**

<b>Programme Title</b>	Data Communications Networks
<b>UCAS/JACS Code</b>	
<b>School/Subject Area</b>	Engineering and Applied Science/Electronic Engineering
<b>Final Award</b>	MSc
<b>Interim Awards</b>	PgD, PgC
<b>Mode(s) of Study</b>	Full Time on Campus, Part Time with Online Distance Delivery
<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>	IET
<b>Dates Program Specification Written and Revised</b>	2010/03/18
<b>Education Aims of the Programme</b>	<p>To provide the students, who will already have a technical background, with a thorough grounding in the principles underlying modern computer and data networks.</p> <p>To provide students with the requisite specialist knowledge and skills to develop and manage current systems and to adapt to the changing face of data network technology.</p> <p>To produce graduates who should be able to take active roles in a wide range of areas within the computer networking industry.</p>
<b>Relevant Subject Benchmark Statements and other External and Internal Reference Points used to inform programme outcomes</b>	<ul style="list-style-type: none"> <li>• The Framework for Higher Education Qualifications.</li> <li>• Staff research interests and expertise.</li> <li>• Support, guidance and direction from industrial partners, and in particular the industrial steering committee which meets twice per year.</li> <li>• QSC Checklist for Distance Learning Programmes.</li> </ul>

<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>
Telecommunications Perspectives	10	7	EE4000	YES
MSc Project	80	7	EE4006	YES
Mobile Data Network	10	7	EE4016	YES
Realtime Communication Networks	10	7	EE4017	YES
Project Preparation	10	7	EE4019	YES
Information Theory and Coding and Traffic Theory	10	7	EE401A	YES
Distributed Network Applications	20	7	EE4024	YES
Internetworking	10	7	EE403B	YES
Software Engineering	10	7	EE404A	YES
Introductory Programming	10	7	EE404B	YES
<b>TOTAL</b>	180			

**Programme Outcomes, Learning and Teaching and Assessment Strategies**

**Knowledge and Understanding**

<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 technical issues associated with delivering broadband data performance seamlessly over cellular and mesh networks to mobile platforms	Lectures, Practicals, Tutorials, Directed Reading, Laboratory	Formal Examination, Laboratory, Oral Examination, Coursework, Online test
2	The general architectural features needed to build, deploy, and how to manage large-scale distributed object and software systems		
3	The issues in modern packet switched networks.		
4	The network requirements to meet the needs of realtime and treamed continuous media		
5	How to structure software according to the object-oriented paradigms		
6	The underlying functions of Stored Programme Control for digital telephone exchanges, how to construct real-time software for telecommunications systems, how to structure software according to the object oriented paradigms		
7	The technical issues and principles associated with a range of internet applications and services		
8	The nature of information, the effects of noise in analogue and digital transmission systems and the construction of both source codes and error-detection and error-correction codes		
9	The basic principles of teletraffic and queuing theory		

<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, analyse and report on a specialised topic with a view towards innovation and gaining a fresh insight	Project, Tutorials, Discussion, Peer Review.	Dissertation, Written Report, Coursework
2	Convey complex ideas in a structured scholarly manner and to perform independent work in problem solving		
3	Critically review and appraise technical information and form an opinion of its accuracy, value and worth		
4	Critically evaluate their own work and recognise its contribution and context		
5	Research and condense technical information		
6	Take independent responsibility for their own learning		

<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 their knowledge of the principles underlying modern data networks	Laboratory, Lectures, Practicals, Tutorials	Coursework, Formal Examination, Laboratory
2	Apply the requisite specialist knowledge and skills to develop and manage current systems and to adapt to the changing face of communications technology		

<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	Communication skills	Discussion, Peer Review, Project, Tutorials, Laboratory	Coursework, Dissertation, Oral Examination, Written Report, Laboratory
2	Project and time management skills		
3	The ability to research and condense technical information		
4	The ability to take independent responsibility for their own learning		
5	Teamwork		

<b>Entry Requirements</b>	<p>Students must have a qualification or combination of qualifications at the level of a first or second class UK honours degree in a relevant engineering field, science or closely related discipline.</p> <p>All applicants are required to have proficiency in English (General Regulations 2.3). For applicants whose first language is not English this may be a TOEFL score of 600 (Paper) or 250 (Computer), IELTS 6.5 overall (5.5 in each test), or GCSE C minimum. Students on the borderline of this minimum proficiency may be required to satisfactorily complete a pre-sessional course of English for Academic Purposes provided by the School of Languages and Social Sciences.</p>
<b>Programme Regulations</b>	<p>1 Attendance Requirements</p> <p>1.1 Students are normally required to attend all laboratory sessions attached to modules on these programmes. Failure to do so may result in the student being required to repeat the laboratory the following year to obtain credit for the associated module.</p> <p>1.2 During the project phase of the programmes students are required to provide evidence of progress to the academic project supervisor (if an internal project) or tutor (if an industrial project) at regular intervals not normally exceeding two weeks.</p> <p>2 Criteria for Progression and transfers</p> <p>2.1 Students who fail to satisfy the Board of Examiners in more than thirty taught credits will normally be required to pass the referred assessments relating to these credits at the first opportunity before being allowed to proceed with the project.</p> <p>2.2 The Associate Dean for Postgraduate Programmes may allow transfer between the Certificate, Diploma and Masters programmes provided students achieve the following number of credits to be eligible for an award:</p> <p>Masters Degree 180 credits with at least 150 credits at level 7. This will consist of 90 taught credits, the 30 credit project preparation and the MSc project</p> <p>Postgraduate Diploma (PgD) 120 credits with at least 90 credits at level 7. This will consist of the taught credits and the Project Preparation component.</p> <p>Postgraduate Certificate (PgC) 60 credits of taught modules, at level 7.</p> <p>2.3 The Associate Dean for Postgraduate Programmes may allow transfer between the full-time and part-time distance learning variants of the programme at his/her discretion.</p> <p>3 Dissertation/Project Requirements</p> <p>3.1 The project is assessed as two modules, an initial two month preparatory stage assessed as module EE4019 worth 30 credits and the main project assessed as module EE4006 worth 60 credits assessed after six months.</p>

The general regulations requirements for Master projects shall apply to both stages. In particular no condonement of failure in either project component is permitted.

3.2 Students must submit an electronic copy of their dissertation. This electronic copy shall be submitted for electronic comparison against electronic sources including other students work. The only exception to this requirement will be for project dissertations which contain particularly sensitive material and for which restriction of access has been granted.

4 Distance and Part Time Delivery Modes

4.1 The study profile (module selections) for students studying part time via distance learning shall be by agreement with the programme director for the relevant programme.

4.2 Changes to the study profile must be by agreement with the programme director prior to commencement of the relevant modules.

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.