Programme Specification Telecommunications and Internet Systems

1 AWARD INSTITUTION/BODY: University of Ulster
2 TEACHING INSTITUTION: University of Ulster
3 LOCATION: Coleraine
4 ACCREDITED BY: British Computer Society
5 FINAL AWARD: PgDip/MSc
6 MODE OF ATTENDANCE: Full-time or Part-time
7 SPECIALISMS: Computing Science
8 COURSE/UCAS CODE: 2128/2129 (Full-time); 2252/2253 (Part-time)
9 DATE REVISED: 2007/2008

10 EDUCATIONAL AIMS OF THE COURSE

The overall aim of this course is to provide an advanced education in Telecommunications and Internet Systems; to encourage the development of skills and knowledge levels in these technologies; and to make a significant contribution to the pool of professional and technological skills available to support associated industry, teaching and research in Northern Ireland and further afield.

The main objectives of the Diploma course are to:

- Provide students with an advanced knowledge of Telecommunications and Distributed Systems technologies (including the Internet)
- Ensure that students can evaluate and appraise the issues which must be addressed when designing and implementing a communications network
- Investigate management issues and mechanisms that must be deployed in real-time to support relevant digital network topologies
- Ensure that students can design and construct distributed systems and client-server architectures and can assess their advantages and disadvantages

In addition to these, the main objectives of the Masters course are to:

- Equip students to plan, execute and report on a research project in a specialism within the field of Telecommunications and Internet Systems, to be presented as a dissertation
- Allow students to develop sufficient knowledge and research skills within Telecommunications and Internet Systems to enable them to proceed either to an MPhil/PhD research degree or to a professional doctorate in Informatics.

11 MAIN LEARNING OUTCOMES

The following reference points were used to inform the development of the programme and its learning outcomes:

- The University’s Vision and core strategic aims, teaching and learning strategy and policies
- Draft benchmarking standards for taught Masters in Computing (supported by QAA) at [http://www.comp.leeds.ac.uk/roger/cphc/Masters/BM.pdf](http://www.comp.leeds.ac.uk/roger/cphc/Masters/BM.pdf)
Current research or other advanced scholarship carried out by academic staff
Requirements of the British Computer Society
National and University qualifications and credit frameworks.

The course provides opportunities for students to achieve and demonstrate the following learning. Successful students will be able to:

11K KNOWLEDGE AND UNDERSTANDING OF SUBJECT

Successful students will be able to:

K1 Understand and critically assess advanced concepts, principles, practices and methods of evaluation used within the fields of Telecommunications and Distributed Systems (especially the Internet)
K2 Explain the importance of telecommunications and computer networking as an infrastructural enabler for digital services
K3 Understand the methodologies underlying the construction, development and deployment of distributed system architectures and applications
K4 Understand how security in Networks and Distributed systems may be achieved.

Learning and Teaching Methods: Self-directed learning employing study packs and research based materials, on-line discussion boards and tutorials.

Assessment Methods: Written coursework (including project report), presentations, oral examination and written unseen examinations.

11I INTELLECTUAL QUALITIES

A student should be able to:

I1 Analyze the issues that must be addressed when designing and implementing or modifying a communications network to achieve given requirements
I2 Design experiments to evaluate and compare aspects of network configuration
I3 Design distributed applications (including those involving multimedia) to satisfy given requirements
I4 Research and critically analyse a particular area of Telecommunications or Distributed Systems.
I5 Specify and execute a research project to investigate a substantial problem within Telecommunications or Distributed Systems.

Learning and Teaching Methods: Self-directed learning employing study packs and research based materials, on-line discussion boards and tutorials.

Assessment Methods: Written coursework (including project report), presentations, oral examination and written unseen examinations.
1P PROFESSIONAL/PRACTICAL SKILLS

A student should be able to:

P1 Configure or modify a network
P2 Gather, interpret and present information and statistics related to aspects of network performance
P3 Carry out experiments and simulations to investigate network activity using an appropriate package
P4 Implement a distributed system (including those involving multimedia)

Learning and Teaching Methods: Practical exercises involving software tools.

Assessment Methods: Programming-based assignments, use of simulation package, presentations.

1T TRANSFERABLE SKILLS

A student should be able to:

T1 Organise and communicate ideas, descriptions of systems and experimental results orally and in writing
T2 Manage time and work within given time scales
T3 Work independently
T4 Use ICT effectively.

Learning and Teaching Methods: Self-directed learning employing study packs and research based materials, practical exercises involving software tools, on-line discussion boards and tutorials.

Assessment Methods: Written coursework (including project report), presentations, oral examination and written unseen examinations.
**11 PROGRAMME LEARNING OUTCOME MAP**

**Please note:** The matrix displays only the measurable programme outcomes and where these are developed and assessed within the modules offered in the programme.

### DIPLOMA

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**MASTERS** (in addition to those for the DIPLOMA)

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STRUCTURE AND REQUIREMENTS FOR THE AWARD

The Postgraduate Diploma programme consists of eight taught modules providing a total of 120 credits points. The Masters degree consists of the eight modules of the Postgraduate Diploma in addition to a project involving a substantial piece of independent research which utilises the knowledge and skills developed in the Diploma. Collaboration with industry in the course of this research will be encouraged. The project provides 60 credit points giving a total of 180 credit points for the Masters. Successful completion of the Diploma is required for progression to the Masters. The language of instruction is English.

The modular organisation of the PgDip/MSc course means that it can be taken in either full or part-time mode of study. In full-time mode, study for the Masters is completed in one academic year. In part-time mode the order in which the modules are taken differs from the full-time structure, with the duration of study being relatively flexible to meet the various extraneous commitments of students.

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SUPPORT FOR STUDENTS AND THEIR LEARNING

Students and their learning are supported in a number of ways:

- Induction sessions to provide advice on the key aspects of the course provision.
- A Faculty Student Handbook to provide a guide to life as a student within the School of Computing & Information Engineering.
- A Course Student Handbook to provide all the necessary information about the course.
- Module Handbooks (electronic or otherwise) to describe the content of each module delivered in a particular year.
A Course Director who has responsibility for ensuring the smooth day-to-day operation of the course.

An Adviser of Studies is allocated to each student. Advisers of Studies are members of staff with the responsibility of assisting students in their personal and career development.

Personal Development Planning

A centralised Accommodation Service that helps new and existing students explore the range of accommodation options available.

A centralised Careers Service is available to help students determine their future career and support their applications for employment.

A centralised Information Services Department with responsibilities covering library, academic and administrative computing, digital communications, audiovisual services and reprographic services

A centralised Student Support Department is available to students who have problems with non-academic aspects of student life.

A Sport and Recreation Department

An International Office

A Students’ Union

A Chaplaincy

14 CRITERIA FOR ADMISSION

Applicants must hold a degree or equivalent or demonstrate evidence of their ability to undertake the course through the accreditation of prior experiential learning.

Specific requirements for admission are detailed below:

Have gained a degree in Computing Science, or in a related discipline where the degree includes a significant component of Computing Science and be competent programmers in at least one high-level programming language, preferably Java.

15 EVALUATING AND IMPROVING THE QUALITY AND STANDARD OF LEARNING AND TEACHING

Mechanisms for review and evaluation of teaching, learning, assessment, the curriculum and outcome standards:

University processes for initial approval and periodic re-approval

External Examiner Reports

Views of employers

Module Reviews (Student Questionnaires and Module Report)

Annual Staff Reviews

Course Committee reviews
SECTION B: PROVISION

- Annual Subject Monitoring (incorporating Annual Programme Commentary)
- Peer Teaching Observations and Feedback

Committees with responsibility for monitoring and evaluating quality:
- Staff Student Consultative Committee
- Course Committee
- Board of Examiners
- School Board (includes elected student members)
- Faculty Academic Affairs Committee (includes elected student members)
- University Teaching & Learning Committee

Mechanisms for gaining student feedback on the quality of their learning experience:
- Staff-Student Consultative Committee
- Student representatives on School and Faculty boards
- Module evaluation questionnaires / module forum / module freeform responses

Staff development includes:
- Updating in the subject through research and scholarship
- Membership of professional bodies
- Consultancy
- Research and Knowledge Transfer
  - Representation on external working groups and committees

16 REGULATION OF STANDARDS

Assessment rules

It should be noted that:
- The pass mark for modules and individual assessments will be 50%.
- In both the Diploma and the Masters degree the performance level for pass is 50% and for distinction is 70%.
- Distinction in the Diploma requires a mark of at least 70% in modules amounting to 60 credit points.
- Distinction in the Masters degree requires a mark of at least 70% in modules amounting to 90 credit points including the Project.

External Examiners
There is one External Examiner for the course.

External examiners are academic subject or professional experts appointed from outside the University. Their key functions are to contribute to the assurance of the
standards of the award and the fair treatment of students. They are involved in the moderation and approval of assessments and the moderation of the marking undertaken by internal examiners.

17  INDICATORS OF QUALITY RELATING TO LEARNING AND TEACHING

Selected indicators of quality relating to Teaching and Learning include:

- Computing was awarded a Grade 4 in the 2001 Research Assessment Exercise
- Several members of the course team belong to the Research Institute in Computing Science
- A Discipline Audit Trail for Computing was examined as part of the 2005 QAA Institutional Audit with a number of positive comments. The following summary extract is appropriate:

  “Computing programmes in the three Schools are defined appropriately and satisfy the requirements of professional accreditation where relevant. A review of assessed work confirmed that the standards achieved by students are appropriate to the titles of the awards and their location in FHEQ. The quality and extent of the DSED impressed the audit team, as did the articulation by staff of their commitment to the continual development and refinement of their courses and their attendance to issues such as student retention in very positive and supportive ways. Students felt that staff were very approachable and helpful, and this contributed significantly to a positive student learning experience. The quality of learning opportunities is suitable for the programmes of study leading to the named awards.”

Report at: http://www.qaa.ac.uk/reviews/reports/instReports.asp?instID=H-0185