BSc Information Technology   **UCAS code: G502**
For students entering Part 1 in 2008/9

Awarding Institution: University of Reading
Teaching Institution: University of Reading
Relevant QAA subject Benchmarking group(s):   Computing
Faculty: Science Faculty
Programme length: 3 years
Date of specification: 18/Aug/2010
Programme Director: Dr Gerard McKee
Programme Advisor: Dr Steve Han
Board of Studies: Computer Science and Informatics
Accreditation: Accredited by the British Computer Society

Summary of programme aims
This programme aims to prepare students for a career in the Information Technology industry, with a particular emphasis on the elements of computer systems and their use in business. Graduates will be well qualified to play a disciplined and creative part in a development or support environment.

The programme aims to develop the students' knowledge of the practice and underlying theory of Information Technology, necessary for them to secure employment as a professional in a wide variety of industries; to encourage their critical and analytical skills, including computational thinking; and to develop their skills in applying practical concepts to the design of computer systems, and the development of Management Information Systems.

Transferable skills
During the course of their studies at Reading, all students will be expected to enhance their academic and personal transferable skills in line with the University's Strategy for Learning and Teaching. In following this programme, students will have had the opportunity to develop such skills, in particular relating to communication, interpersonal skills, learning skills, numeracy, self-management, use of IT and problem-solving and will have been encouraged to further develop and enhance the full set of skills through a variety of opportunities available outside their curriculum.
As part of this programme students are expected to have gained experience in the following transferable skills IT, technical writing, oral presentations, team-working, problem-solving, use of library resources, time-management, career planning and management, and business awareness.

Programme content
The programme is based around five themes:
• E-business systems
• Information systems and software engineering
• Software tools, Packages and Computer Applications (COTS -Commercial Off the Shelf Software)
• Programming and design
• IT Support (including infrastructure)

Material from all themes must be taken to qualify for the degree; in addition there is some general material that is compulsory for all students.

Part 1 (three terms)
Compulsory modules

Module	Title	Credits	Level
SE1SA5	Programming	20	4
SE1SB5	Software Engineering	20	4
SE1TQ5	Commercial off-the-shelf Software 1	20	4
SE1TR5	E-Business 1	20	4
SE1TT5	IT Support 1	20	4

Optional modules:

20 credits from:

SE1EB5	Computer and Internet Technologies	20	4
SE1SC5	Computer Science Roadmap	20	4

Other options (including a foreign language from the IWLP) may be selected with the approval of the Programme Adviser. Options are subject to timetabling constraints.

Part 2 (three terms)
Compulsory modules

Mod Code	*Module Title*	*Credits*	*Level*
CS2TS6	Software Engineering 2 and Career Management	20	I
CS2TA6	Information Systems Engineering *Open Book*	20	I
CS2TQ6	Databases for Business	20	I
CS2TX6	Business Programming	20	I
CS2TR6	E-Business 2	20	I

Optional modules:

MM270	Practice of Entrepreneurship	20	5
CS2TT6	IT Support 2	20	5

Students may alternatively choose up to 20 credits from other modules, with Programme Advisers permission and subject to timetabling.

Part 3 (three terms)
Compulsory modules

Mod Code	*Module Title*	*Credits*	*Level*
SE3Z10	Social, Legal and Ethical Aspects of Science and Engineering	10	H
CS3TU4	Individual Project	40	H

Optional modules: Select 70 credits from:

CS3TQ7	Data Management	10	6
CS3TA4	Enterprise IT Architectures	10	6
CS3TC4	Project Management	10	6
CS3TB4	Software Quality and Testing	10	6
CS3TZ4	Network Security	10	6
MM374	Informatics for E-Enterprise	20	6
CS3TE4	Requirements Analysis	10	6
SE3C9	Computer Networks	20	6

Students may choose up to 20 credits from other modules from the Computer Science programme or elsewhere, with Programme Advisers permission and subject to timetabling. This may include up to 20 credits 'out of year' material, such as the modules CS2K7 XML and Web Technologies (10 credits at level 5) and CS2L7 Human Computer Interaction (10 credits at level 5).

Progression requirements
To gain a threshold performance at Part 1 and qualify for the CertHE a student shall normally be required to achieve an overall average of 40% over 120 credits taken in Part 1, where all the credits are at level 4 or above,

and a mark of at least 30% in each modules amounting to not less than 100 credits. In order to progress from Part 1 to Part 2, a student shall normally be required to achieve a threshold performance at Part 1.

To gain a threshold performance at Part 2 and qualify for the DipHE a student shall normally be required to achieve an overall average of 40% over 120 credits taken in Part 2, and a mark of at least 30% in individual modules amounting to not less than 100 credits. In order to progress from Part 2 to Part 3, a student shall normally be required to achieve a threshold performance at Part 2. At least 100 credits must be at level 5.

To be eligible for Honours, students must obtain an overall average mark of 40% **and** at least 40% in the Individual Project. At least 100 credits must be at level 6.

Summary of teaching and assessment
Teaching is organised in modules that typically involve both lectures and practical work. Most modules are assessed by a mixture of coursework and formal examination. However, some modules are assessed only as coursework. While others are assessed solely by examination. Details are given in the relevant module descriptions.

Admission requirements
Entrants to this programme are normally required to have obtained:
300 points from 3 A levels or 350 from 3 A levels + an AS
GCSE English: grade B; maths: Grade B
Equivalent qualifications are acceptable.

Admissions Tutor: CS admissions tutor (with the assistance of the Programme Adviser and Director).

Support for students and their learning
University support for students and their learning falls into two categories. Learning support includes IT Services, which has several hundred computers, and the University Library, which across its three sites holds over a million volumes, subscribes to around 4,000 current periodicals, has a range of electronic sources of information and houses the Student Access to Independent Learning (S@il) computer-based teaching and learning facilities. There are language laboratory facilities both for those students studying on a language degree and for those taking modules offered by the Institution-wide Language Programme. Student guidance and welfare support is provided by Personal Tutors, School Senior Tutors, the Students' Union, the Medical Practice and the Student Services Directorate. The Student Services Directorate is housed in the Carrington Building and includes the Careers Advisory Service, the Disability Advisory Service, Accommodation Advisory Team, Student Financial Support, Counselling and Study Advisors. Student Services has a Helpdesk available for enquiries made in person or online (www.risisweb.reading.ac.uk), or by calling the central enquiry number on (0118) 378 5555. Students can get key information and guidance from the team of Helpdesk Advisers, or make an appointment with a specialist adviser; Student Services also offer drop-in sessions on everything from accommodation to finance. The Carrington Building is open between 8:30 and 17:30 Monday to Thursday (17:00 Friday and during vacation periods). Further information can be found in the Student website (www.reading.ac.uk/student).

Within the providing Department additional support is given though practical laboratory classes. The development of problem-solving skills is assisted by appropriate assignment and project work. There is a Course Adviser to offer advice on the choice of modules within the programme. Course handbooks are provided for each Part of the course: these give more details about the modules which make up the degree. In addition, the School of Computer Science, Cybernetics and Electronic Engineering produces a Handbook for Students, which provides general information about the staff and facilities within the School.

Career prospects
This new degree is designed to be industry oriented. It is expected that graduates will work both within the IT industry as a developer/manager and in a wide range of industries in a support role. Graduates in Information Technology could be expected to have the following generic job titles:
programmer, systems analyst, analyst/programmer, software engineer, applications developer, web developer, help desk/support technician, system support engineer, network engineer, communications specialist, database administrator, project manager, data analyst, software/hardware trainer.

Accreditation will be sought for this degree from the British Computer Society.

Opportunities for study abroad or for placements
N/A

Programme Outcomes

Knowledge and Understanding

A. Knowledge and understanding of:

1. Software including:
1a) Programming languages
1b) Software tools, Packages and Computer Applications, including those used in business
1c) Structuring of data and information
2. Practice
2a) Problem identification and analysis
2b) Design, development and evaluation
2c) Management and organisation
2d) Professionalism and ethics
2e) Commercial and industrial exploitation
3. Hardware
4. Communication and interaction
5. Theory

Teaching/learning methods and strategies

The course concentrates on aspects 1. and 2. with teaching of all aspects involving an introduction of the aspects in theoretical manner and re-enforcement by related practical work, with the first year providing the core, subsequent years involve deeper study.
Aspects 2c) and 2d) will additionally be covered by the compulsory material in the final year.
Aspects 3 and 4. feature within the IT Support and COTS themes particularly from a practical perspective.
Aspects 3, 4. and 5. are presented as supporting material and taught in the context of aspects 1. and 2. as and when they are needed.

Assessment
Knowledge is tested through a mixture of formal examinations and practical work.

Skills and other attributes

B. Intellectual skills - *able to:*

1. Demonstrate knowledge and understanding related to aspects outlined above.
2. Apply such knowledge and understanding to the modelling of computer systems.
3. Recognise and analyse criteria and specifications appropriate to a specific problem.
4. Critically evaluate and test a computer based system.
5. Deploy appropriate methods and tools for creating computer systems.
6. Reflect and communicate
7. Recognise and conform to appropriate professional, ethical and legal practices.

Teaching/learning methods and strategies

1. and 2. As above.
3., 4. and 5. will be taught as part of the themes; Software Engineering; Programming and Design and COTS. The taught element will be re-enforced by practical work.
6. will be taught as part of COTS 1 and E-Business 1, throughout the course the students will be expected to use these skills and they will be particularly exercised in the individual Project.
7. will be pervasive throughout the course but be covered specifically in the Software Engineering theme and the compulsory material in the final year.

Assessment
These skills are tested through a mixture of formal examinations, presentations, reports and practicals. The individual project provides a major piece of work in which among other things the student will be assessed on their abilities to reflect and communicate. Oral presentations will be required in the Software Engineering and COTS themes and the Project, in the latter the presentation will be assessed by two members of staff.

C. Practical skills - *able to:*

1. Specify, design and construct computer-based

Teaching/learning methods and strategies

1. will be covered both theoretically and practically,

systems.
2. Evaluate systems
3. Recognise Risks and Safety aspects
4. Effectively deploy software tools
5. Operate computing equipment effectively.

particularly in the IT Support and Programming and Design themes.
2. will be particularly covered as part of IT Support and COTS themes.
3. The IT support theme will cover practical and theoretical aspects of risk and safety, the compulsory material in the final year will also cover managerial aspects.
4. will be covered theoretically and practically as part of the COTS, Programming and Design and Software Engineering themes.
5. will be covered both as part the COTS and IT Support themes in a theoretical and practical manner.

Assessment
Skills 1. to 5. will be assessed by a mixture of practical work and examination.

D. Transferable skills - *able to:*

1. Effectively retrieve information
2. Present cases in a quantitative dimension.
3. Manage own learning and development.
4. Appreciate the need for continuing professional development (CPD), be able to plan and execute their own CPD
5. Organise and work as part of a team.
6. Plan and manage their own careers.
7. Communicate in a manner appropriate to the situation.
8. Effectively use Information Technology.

Teaching/learning methods and strategies

1. Information retrieval will be covered theoretically and by practical work necessitating the use of browsers and search engines. It will be first introduced in COTS 1 but exercised extensively elsewhere.
2. Numerical skills will be introduced as needed and used in programming examples and project planning. They will also be exercised in the COTS 1. The IT Support theme will require a study of quantative issues related to aspects of costs, efficiency, performance and economics.
3. Time management and organisational skills will be taught as part of Software Engineering. The students will also be expected to use a number of on-line learning tools. Tutorial support for self managed learning will be provided in COTS 1.
4. Professionalism will be an important issue throughout the course. Students will be encouraged to join the BCS and participate in local meetings.
5. The theory of team work will be covered, in Software Engineering, and the students required to undertake a piece of group work
6. The University's Careers management skill module component will be included in the second year of the Software Engineering theme.
7. The role of written and verbal communications will be covered in the COTS and Software Engineering themes.
8. Information Technology will be used throughout the course. The COTS theme will specifically include the use of Information Technology.

Assessment
1. to 3., 5. to 8. will be assessed by a mixture of practical work, presentations, reports and examinations. 4. will be assessed by formal examination. Communication skills (7.) will also be assessed with the Individual Project.

Please note - This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each module can be found in the module description and in the programme handbook. The University reserves the right to modify this specification in unforeseen circumstances, or where the process of academic development and feedback from students, quality assurance process or external sources, such as professional bodies, requires a change to be made. In such circumstances, a revised specification will be issued.