BSc Applied Information Technology   **UCAS code: G503**

For students entering Part 3 in 2009

Awarding Institution:	The University of Reading
Teaching Institution:	The University of Reading
Relevant QAA subject benchmarking group(s):	Computing
Faculty of Science	Programme length: 4 years

Date of specification: April 2009

Programme Director: Dr Gerard McKee

Programme Adviser: Dr Lily Sun, Dr Steve Han

Board of Studies: Information Technology

Accreditation: 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 vocational elements of computer systems and maintenance. The student's placement year aims to provide an understanding of how the methods and technologies learnt in the parts 1 and 2 of this degree relate to the requirements of industry; this deepens the student's appreciation of the topics studied and encourages a more effective approach to their final year modules and project. Graduates will be well qualified to play a disciplined and creative part in a development or support environment.

Transferable skills

The University's Strategy for Teaching and Learning has identified a number of generic transferable skills which all students are expected to have developed by the end of their degree programme. In following this programme, students will have had the opportunity to enhance their skills relating to career management, communication (both written and oral), information handling, numeracy, problem-solving, team working and use of information technology.

As part of this programme students are expected to have gained experience in the following transferable skills: IT (programming, word processing, databases and use of standard software), 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)		Credits	Level
Compulsory modules			
SE1TQ5	COTS 1	20	C
SE1SB5	Software Engineering	20	C

SE1SA5	Programming	20	C
SE1TT5	IT Support 1	20	C
SE1TR5	E-business 1	20	C

Optional modules

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

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

Part 2 (three terms)		Credits	Level

Compulsory modules

CS2TQ6	Databases for Business	20	I
CS2TX6	Business Programming	20	I
CS2TR6	E-business 2	20	I
CS2TS6	Software Engineering 2 and Career Management	20	I
CS2TA6	Information Systems Engineering	20	I

Optional modules

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

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

Placement year		Credits	Level

Compulsory modules

CS2BW4	Placement Work Experience	80	I
CS2BP4	Placement Project	40	I

Part 3 (three terms)		Credits	Level

Compulsory modules

SE3Z5	Social, Legal and Ethical Aspects of Science and Engineering	20	H
CS3TU4	Individual Project	40	H

Optional modules
60 credits from:

CS3TQ7	Data Management	10	H
CS3TA4	Enterprise IT Architectures	10	H
CS3TC4	Project Management	10	H
CS3TB4	Software Quality and Testing	10	H
CS3TZ4	Network Security	10	H
MM374	Informatics for E-Enterprise	20	H
CS3TE4	Requirements Analysis	10	H
SE3A9	Computer Networks	20	H

Students may choose up to 20 credits from other modules from the Computer Science programme or elsewhere, with Course Advisers permission and subject to timetabling.

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 C level 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 I.

Satisfactory completion of the placement period (detailed in the relevant module descriptions) is required for continuation into Part 3 of the four-year degree programme in Applied Information Technology. Those who do not complete the placement year satisfactorily will be permitted to continue to Part 3 of the three-year degree course in Information Technology.

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 H.

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. There are some modules which are assessed only as coursework and others wholly by examination; the details are given in the relevant module descriptions.

Part 2 contributes one third of the final assessment and Part 3 the remaining two thirds.

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: Dr Mike Evans

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, the Careers Advisory Service, the University's Special Needs Advisor, Study Advisors, Hall Wardens and the Students' Union. An Industrial placement officer is available to help you find a suitable role in your placement year (subject to successful application and employee interview). An academic supervisor is allocated to you to support you whilst you are out on placement.

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 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
Placements are compulsory in the third year

Educational aims of the programme
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; and to develop their skills in applying practical concepts to the design of computer systems, and the development of Management Information Systems.

Programme Outcomes

Knowledge and Understanding

A. Knowledge and understanding of:
1. Software including:
1a) Programming languages
1b) Software tools, Packages and Computer Applications
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

Note these are the five areas identified in the Computing benchmark.

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, with the student concentrating on a single theme in their final year.
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 not involved in the supervision of the Project. |

| C. Practical skills – able to:
1. Specify, design and construct computer-based systems.
2. Evaluate systems
3. Recognise Risks and Safety aspects
4. Effectively deploy software tools
5. Operate computing equipment effectively | **Teaching/learning methods and strategies**
1. will be covered both theoretically and practically, 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:	**Teaching/learning methods and strategies**
1. Effectively retrieve information	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. Present cases in a quantitative dimension.	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. Manage own learning and development.	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. Appreciate the need for continuing professional development (CPD), be able to plan and execute their own CPD	4. Professionalism will be an important issue throughout the course. Students will be encouraged to join the BCS and participate in local meetings.
5. Organise and work as part of a team.	5. The theory of team work will be covered, in Software Engineering, and the students required to undertake a piece of group work
6. Plan and manage their own careers.	6. The University's Careers management skill module component will be included in the second year of the Software Engineering theme.
7. Communicate in a manner appropriate to the situation.	7. The role of written and verbal communications will be covered in the COTS and Software Engineering themes.
8. Effectively use Information Technology.	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.