

BSc Information Technology with Management UCAS code: G5N2
For students entering Part 1 in 2004

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: 20 June 2007
 Programme Director: Andrew Adams
 Programme Adviser: Steve Han/Kecheng Liu
 Board of Studies: Information Technology
 Accreditation: British Computer Society (can be applied for individually)

Summary of programme aims

This programme aims to prepare students for responsible professional leadership roles in the Information Technology industry, with a particular emphasis on the business elements of computer systems. Graduates will be well qualified to play a disciplined and creative part in a research, 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

In the first year students spend 50% of their time on IT related subjects, and the remainder on their minor subject. More time is spent on the major subject in latter years. The third year is spent on an approved placement.

Part 1 (three terms)

Compulsory modules

Mod Code	Module Title	Credits	Level
CS1TQ2	<i>COTS 1</i>	20	C
CS1TS2	<i>Software Engineering 1</i>	20	C
CS1TR2	<i>E-business 1</i>	20	C
MM1F4	<i>Introductory Management</i>	20	C
MM1F2	<i>Introductory Financial Accounting</i>	20	C
EC1F5	<i>Introductory Quantitative Techniques</i>	20	C

Part 2 (three terms)

Compulsory modules

Mod Code	Module Title	Credits	Level
CS2BB5	<i>Databases</i>	10	I

CS2TZ3	<i>PC Infrastructure</i>	10	I
CS2TR3	<i>E-business 2</i>	20	I
CS2TX5	<i>Business Programming and Design</i>	20	I
CS2TS3	<i>Software Engineering 2 and Career management</i>	20	I
MM255	<i>Marketing Management</i>	20	I
MM258	<i>Introduction to Information Systems Management</i>	20	I

Placement year		<i>Credits</i>	<i>Level</i>
Mod Code	<i>Module Title</i>		
CS2BW4	<i>Placement Work Experience</i>	80	I
CS2BP4	<i>Placement Project</i>	40	I

Part 3 (three terms)		<i>Credits</i>	<i>Level</i>
<i>Compulsory modules</i>			
Mod Code	<i>Module Title</i>		
CS3TU4	<i>Individual Project</i>	40	H
SE3Z5	<i>Social, Legal and Ethical Aspects of Science and Engineering</i>	20	H
MM332A	<i>Strategic Management and Business Policy 1</i>	20	H

Optional modules:

Students should take 40 credits of optional material from:

Mod Code	<i>Module Title</i>		
CS3TA4	<i>Enterprise IT Architectures</i>	10	H
CS3TE4	<i>Requirements Engineering</i>	10	H
CS3TC4	<i>Project Management</i>	10	H
MM374	<i>Informatics for E-Enterprise</i>	20	H
MM359A	<i>Business Ethics 1</i>	20	H
MM330	<i>Comparative International Management</i>	20	H
MM335	<i>International Marketing</i>	20	H

Students may choose up to 20 credits from other modules from the Information Technology or Management programmes or elsewhere, with Course Advisers permission and subject to timetabling.

Progression requirements

To gain a threshold performance at Part 1 a student shall normally be required to achieve an overall average of 40% over 120 credits taken in Part 1, and a mark of at least 30% in individual 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 and obtain at least 30% in all compulsory modules.

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.

To be eligible for Honours, students must obtain an overall average mark of 40% **and** pass the Individual Project (CS3TU4). Students who pass Part 2 are eligible to transfer to the Business Information Technology BSc (this degree does not include a placement year).

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.

Weighting between part 2,3 and 4 is outlined in Faculty regulations.

Admission requirements

Entrants to this programme are normally required to have obtained:

Grade C or better in English in GCSE and grade B or better in GCSE Mathematics; and achieved UCAS Tariff: 320 points, from three A2's plus:

(i) Maths either at A level or GCSE grade A; and (ii) either an essay-based A or AS level, or GCSE Grade A English

Equivalent qualifications are acceptable.

Admissions Tutor: to be announced

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.

Within the providing Department additional support is given through 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 with Management could be expected to have the following generic job titles:

- Systems manager
- IT Operations Manager
- 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 can be sought for this degree from the British Computer Society.

Opportunities for study abroad or for placements

Placements are a compulsory part of the programme in the third year.

Educational aims of the programme

To develop the students' knowledge of the practice and underlying theory of Information Technology and Business, 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
 - 1c) Packages
 - 1d) Computer Applications
 - 1e) 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 identifies in the Computing benchmark.

In addition the following from the Business and Management elements:

- a. The theoretical basis of management and key functional areas of business.
- b. Current developments in the practice and theory of business management.
- c. Fundamental concepts of business management relevant to the student becoming a manager in a UK business.
- d. The environmental and ethical context of business management in the UK.
- e. An understanding of the importance of international and e.business.
- f. Understanding of the drivers of change in business, including technology, management practice, business cultures and organisational behaviour.

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 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.

Business:

- a-e Lectures; tutor-led tutorials; student and tutor-led seminars and problem-based learning. All Management courses.
- b. Guest lecturers from industry and directed self-study. CB3BW4;CS3BP4.
- d-e. MM359;MM258;MM330;MM335;MM330.
- f. MM332;MM335;MM254; CSB3P4;CS3BW4

Assessment in IT and Business

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.
- In Business:
- a. Apply the skills needed for academic study and enquiry.
 - b. Evaluate research and a variety of types of information and evidence critically.
 - c. Synthesise information from a number of sources in order to gain a coherent understanding of theory and practice.
 - d. Apply strategies for appropriate selection of relevant information from a wide source and large body of knowledge.
 - e. Utilise problem-solving skills.
 - f. Analyse, evaluate and interpret the assumptions and principles underpinning business management

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.

In Business:

a-f. Lectures; tutor-led tutorials; student and tutor-led seminars; self-directed learning; research-based teaching materials and methods; problem-based learning scenarios. All Management classes to some degree.

b,e,f. Case studies.CS3BW4;
CS3BP4;MM252;MM332.

c-d. Independent research and self study
CS3BW4; CS3BP4;MM252;MM332.

Assessment:

Written exam papers; practical assessments; coursework (essay); case study analysis; dissertation.

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
- Practical skills of business:
- a. Understand the economic basis of the firm in its wider economic, political and social environment.
 - b. Recognise and understand basic financial and management accounting features of a firm.
 - c. Evaluate the behaviour, culture and strategy of firms.
- Effectively apply key professional skills learnt in optional classes to the business world.

Teaching/learning methods and strategies

1. will be covered both theoretically and practically, particularly in the Programming and Design themes.
 2. will be particularly covered as part COTS themes.
 3. Theoretical aspects of risk and safety, the compulsory material in the final year will also cover managerial aspects. Practical aspects will be presented in the IT themes.
 4. will be covered theoretically and practically as part of the COTS, Programming and Design and Software Engineering themes.
 5. will be covered as part the COTS theme in a theoretical and practical manner.
- Assessment*
- Skills 1. to 5. will be assessed by a mixture of practical work and examination.

In business:

- a-d. Practical projects; placements; seminars; lectures; problem-based scenarios. MM1F4;MM254;MM332
- b. Lectures and workshops. MM1F2;
- c Case studies, placements, practical projects. MM254;MM332;MM330.

Assessment: Written exam; practical papers; coursework; case studies.

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.

Business elements: able to:

- a. Communicate effectively with a wide range of individuals using a variety of means.
- b. Evaluate his/her own academic professional performance.
- c. Utilise problem-solving skills in a variety of theoretical and practical situations.
- d. Manage change effectively and respond to changing demands.
- e. Take responsibility for personal and professional learning and development (Personal Development Planning).
- f. Manage time, prioritise workloads and manage personal emotions and stress.
- g. Understand career opportunities and begin to plan a career path.
- h. Information management skills, e.g. IT skills.

9. Ability to function in the work place

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.
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 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 IT.

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.

Business elements:

a-h. Lectures, group work, group presentations, dissertation and project based methods. MM1F4; MM252; CS3BW4;CS3BP4;MM332;MM359; MM330;MM335. CMS.

b-c. Group projects, business simulation exercises, self assessment exercises. CS3BW4;CS3BP4; CMS; MM332; MM335;MM359;MM330; MM252;

Assessment

Assessments include a wide variety of methods such as tutor feedback, critiques of presentations, interactive discussion in groups. Group feedback and peer assessment. 9. Is provided by the work placement and assessed through reports and oral examination.

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 processes or external sources, such as professional bodies, requires a change to be made. In such circumstances, a revised specification will be issued.