BSc Information Technology with Economics UCAS code: G5L1

For students entering Part 1 in 2006

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: June 2005	
Programme Director:	Shirley Williams
Programme Adviser:	Lily Sun
Board of Studies:	Information Technology and Business
Accreditation:	

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*
SE1TQ5	*COTS 1*	20	C
SE1SB5	*Software Engineering*	20	C
SE1TR5	*E-business 1*	20	C
EC1F1A	*Introductory Microeconomics*	20	C
EC1F1B	*Introductory Macroeconomics*	20	C
EC1F5	*Introductory Quantitative Techniques*	20	C

Part 2 (three terms)		*Credits*	*Level*
Compulsory modules			
Mod Code	*Module Title*		
CS2BB5	*Databases*	10	I
CS2TZ3	*PC Infrastructure*	10	I
CS2TR3	*E-business 2*	20	I
CS2TX5	*Business Programming and Design*	20	I
CS2TS3	*Software Engineering 2 and Career management*	20	I
	Two of		
EC201A	*Microeconomics I.1*	20	I
EC202A	*Macroeconomics I.1*	20	I
EC203A	*Introductory Econometrics I.1*	20	I

Placement year		*Credits*	*Level*
Mod Code	*Module Title*		
CS3BW4	*Placement Work Experience*	80	I
CS3BP4	*Placement Project*	40	I

Part 3 (three terms)		*Credits*	*Level*
Compulsory modules			
Mod Code	*Module Title*		
CS3TU4	*Individual Project*	40	H
SE3Z5	*Social, Legal and Ethical Aspects of Science and Engineering*	20	H
EC308A	*Business Economics 1*	20	H

Optional modules in Information Technology:
Students should take 20 credits of optional material from Information Technology final year modules such as:

Mod Code	*Module Title*		
CS3TA4	*Enterprise IT Architectures*	10	H
CS3TC4	*Project Management*	10	H
CS3TR4	*Informatics for E-Enterprise*	20	H

Optional modules in Economics:
Students must also take 20 credits of optional material, subject to pre-requisites and timetabling, from modules such as:

EC301A	*Microeconomics II.1*	20	H
EC302A	*Macroeconomics II.1*	20	H
EC311A	*International Economics 1*	20	H
EC312A	*Economics of Development 1*	20	H
EC313A	*Business Forecasting & Operations Research 1*	20	H
EC314A	*Public Economics 1*	20	H
EC315A	*Economic Issues in Historical Perspective 1*	20	H
EC316A	*European Economic Integration 1*	20	H
EC320A	*Money & Banking 1*	20	H
EC322A	*Economics of Labour 1*	20	H

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 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.

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 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 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 will 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:
In Information Technology
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 economics:
6. The fundamental concepts and techniques of microeconomics, macroeconomics and quantitative methods.
7. The fundamental concepts and techniques of business economics and policy.
8. A more specialist application in economics.

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Teaching/learning methods and strategies
In Information Technology 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.
Assessment
Knowledge is tested through a mixture of formal examinations and practical work.

In economics, the knowledge required for the basic topics is discussed in formal lectures supported by smaller group discussions on set questions.
This pattern is also followed in the more specialist options with the non-assessed work required varying according to the nature of the subject matter.
Assessment
Most knowledge is tested through a combination of coursework and unseen formal examinations. Short tests and oral presentations also contribute.

Skills and other attributes

B.Intellectual skills – able to:
In Information Technology
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 Economics:
8. Think logically
9. Apply analytical principles to a range of problems
10. Organise tasks into a structured form.
11. Assess the impact of recent and current changes on business and economic circumstances.
12. Transfer appropriate techniques and knowledge from one topic within the subject matter to another
13. Plan, organise and write a report on an independent project

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 projects.

In Economics, the need to think logically and analytically permeates the compulsory modules in the programme. The quality of the analysis depends on a strict focus on the central features of a problem.
The more specialist topics provide many opportunities to apply this core approach to a range of problems in a wide variety of contexts.

Assessment

8-10 are covered extensively in the core modules; 11-12 are given wide scope in the optional modules; 13 is assessed directly by means of essays prepared in Parts 2 and 4 in all modules.

C. Practical skills – able to:
In Information Technology:
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

In Economics:
6. Understand and develop a chain of economic reasoning
7. Formulate and analyse business economics problems
8. Interpret and assess econometric results
9. Write critical analyses of business economic questions

10. Undertake a set of tasks associated with improving their career prospects.

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 Economics the compulsory subjects concentrate on formal economic and econometric reasoning. Problem solving forms an important part of class work especially in Parts 2 and 4.
The specialised options involve writing detailed assessments of set topics.

Assessment
Most skills are tested through a combination of coursework, including both problem solving and essays, and through unseen examinations.

The career skills component at 10 will be assessed according to the module description of the Careers Advisory Services CMS.

D. Transferable skills – able to: In Information Technology: 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. In Economics: 9. Communicate ideas in a logical way 10. Give oral presentations 11. Contribute to group discussions of a business problem 12. Use library resources both on- and off-line 13. Manage time 14. Plan career strategy 15. 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 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. In Economics, seminars in Parts 2 and 3 involve group discussions and oral presentations. Library resources have to be used continuously in the preparation of essays and Project work. The highly structured system of deadlines for assessed work requires good time management *Assessment* Most skills are tested indirectly through the preparation of course and Project work. 15. 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.