

BSc (Hons) Information Technology

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Programme Specification

Section 1: Basic Data

Awarding institution/body	University of the West of England
Teaching institution	University of the West of England
Faculty responsible for programme	Computing, Engineering and Mathematical Sciences
Programme accredited by	N/A
Highest award title	BSc (Hons) Information Technology
Default award title	
Interim award title	BSc
Modular Scheme title (if different)	
UCAS code (or other coding system if relevant)	560
Relevant QAA subject benchmarking group(s)	Computing
On-going	
Valid from (insert date if appropriate)	September 2003

Authorised by...

Date:...

Version Code

For coding purposes, a numerical sequence (1, 2, 3 etc.) should be used for successive programme specifications where 2 replaces 1, and where there are no concurrent specifications. A sequential decimal numbering (1.1; 1.2, 2.1; 2.2 etc) should be used where there are different and concurrent programme specifications

Section 2: Educational aims of the programme

The award is a one-year programme to degree level for holders of HND, or equivalent qualifications or experience, in areas of Computing, Information Technology and Information Systems. It aims to provide a theoretical as well as practical experience building on the predominantly practical material covered in the HND programme. It aims to introduce students to some new topics not encountered in their previous studies and to extend other areas of their understanding. This programme will enable students to acquire the relevant competences and knowledge necessary to contribute effectively to deployment of computer-based information systems in changing technological, business, and social environments.

In particular this Award aims to:

- To provide a broad-based coverage of the theory and practise of aspects of Information Technology.
- To instil the practical skills necessary both for initial employment within the industry and for communicating with and comprehending other professionals in the application domain.
- To develop understanding of the role, capabilities and limitations of IT and e to enable students to evaluate and select appropriate solutions.
- To encourage students to uphold general professional, ethical and social standards and to keep up-to-date with recent technological and theoretical developments.
- To provide exposure to the body of research that underlies the use of computers and development of information technology.
- To provide sufficient knowledge of how organisations function to enable the student to pursue a management career in a range of organisations.

Section 3: Learning outcomes of the programme

The award route provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the areas summarised in the following charts. Specific learning outcomes for individual modules can be seen in the module specifications.

A Knowledge and understanding

Learning outcomes

Teaching, Learning and Assessment Strategies

A Knowledge and understanding of:

Some of the following depending on choice of modules.

1. The spread and diversity of IS applications in different domains
2. The understanding of human-centred and sociotechnical approaches to building and understanding IS in their implementation contexts
3. The commercial context of software development
4. Alternative perspectives on the nature of design
5. Program design concepts, methods and notations; object-oriented design and other design paradigms
6. The role of requirements in software development

Teaching/learning methods and strategies:

Since students entering the award will come from a variety of IT based programmes the award provides a sufficiently flexible programme to account for their needs whilst at the same time, offering a coherent programme of study. The award will provide students with the ability to have a flexible approach and background to work effectively in a rapidly changing industry. The continuing expansion of information technology in business and more generally ensures a continuing high level of demand for IT professionals.

Assessment:

Knowledge and understanding are assessed at the conceptual and theoretical level by examination, primarily, and practically in coursework assignments. Different elements are

<p>software development</p> <ol style="list-style-type: none"> 7. Object oriented and relational databases; logical and physical database design 8. The concepts underpinning distributed systems and networks 9. Professional, ethical and social values 10. The long term impacts of IS/IT 11. Research in an appropriate area using relevant information sources. 	<p>covered as follows:</p> <ol style="list-style-type: none"> 1. Laboratory practice <p>Several of the taught modules are planned with up to 50% of class time committed to time in computer laboratories. In such laboratory sessions, students work individually, in pairs, or in small groups under the direction of module tutors.</p> 2. Design Techniques <p>Various design techniques are taught throughout the award. Object orientated databases UQC134H3), Case tools (UQC127H3), Programs from Formal Specifications(UQC138H3) Techniques, such as top-down functional decomposition, are also covered.</p> 3. Systems Implementation <p>Students are encouraged to produce implementations of computer-based systems in a number of modules.</p> <p>The entire second semester of the module Information Systems Development 2, UQI106S2 is spent developing and implementing the system analysed and designed in semester 1, using an appropriate DBMS.</p> <p>Students also design and implement systems using a variety of tools and techniques in the Information Systems Development and Practise 3, (UQI116S3) module.</p> 4. Development Environments and Tools <p>All students have access to a range of general purpose tools on PCs and Unix machines. For example on the former, students have access to Word, Powerpoint, and Internet Explorer. On the latter to emacs, javac and java..</p> 5. Group Working <p>Laboratory and tutorial work is often carried out by students working in pairs or small groups.</p> 6. Individual Project/Information Systems Dissertation <p>Students can undertake a substantial (40 credits) personal computing project (Computing Project, UFC001D3). Each student project is supervised by a</p>
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member of staff. Projects typically involve research, requirements analysis, design, coding, testing and evaluation. Projects enable students to integrate the knowledge and skills that they have gained from a variety of modules as they attempt to address a significant computing problem.

Alternatively students may undertake the Information Systems Dissertation (UQI110S3) Each student dissertation is supervised by a member of staff. This dissertation allows students to continue with material from several modules. The dissertation has a less technical orientation than the Computing Module.

7. Project management

In general, some project management skills (scheduling, prioritising, monitoring, time management and taking remedial action, for example) are inculcated in students just through the normal activities required of them, such as handing in assignments of appropriate quality on time.

Again the individual project/dissertation undertaken by all students give each student the chance to learn and apply project management skills.

B Intellectual Skills

B Intellectual Skills

1. Critical Thinking
2. Analysis
3. Synthesis of different types of information
4. Evaluation
5. Problem solving
6. Appreciate problem contexts
7. Balance conflicting objectives

Teaching/learning methods and strategies

Intellectual skills are developed exploring the issues surrounding the application of information systems in human contexts. Because 'context' is understood as fundamental, and not as an outer layer on a technical core, these cognitive skills tend to be developed in parallel, rather than sequentially. Thus, element 6 is developed alongside elements 5 and 2; element 7 is developed alongside element 3; and elements 1 and 4 are inculcated from the beginning.

Element 6 is particularly salient in IS, where 'problem context' is understood broadly, to include organisational and social settings, as well as a historical perspective. This produces a concomitant breadth in elements 3 and 5, because problems are viewed as sociotechnical (and situated) rather than technical (and abstract), and relevant information sources are correspondingly expanded. The award has a strong focus on the *usability* and *accessibility* of information systems, so that element 7 has to address the spread and diversity of requirements and objectives present in the user community.

Modules with a higher theoretical or descriptive content are the ones where synthesising different types of information (3) will be most overt. The practice modules are designed to achieve a synthesis between theoretical and practical knowledge. Critical thinking (1) and evaluation (4), are foundational principles for the IS discipline as conceived at UWE. Demonstrating the core commitment in IS awards, including one like this with significant technical content, to developing reflective practitioner

Assessment

- These cognitive skills permeate the award and cannot be narrowly tied down to the assessment in particular modules. Some general observations can be made:
- analysis (2), problem solving (5), evaluation (4), the appreciation of problem contexts (6) and balancing conflicting objectives (7) are most directly assessed by coursework in: Requirements Engineering, Electronic Commerce, CASE tools, Hypermedia IS, Software Engineering Group Project etc.
- critical thinking (1), synthesis (3), and evaluation (5) can be well assessed throughout by examination, but in this award are also assessed for their practical realisation in Computing Project, Information systems dissertation and design based modules.

C Subject, Professional and Practical Skills

<p>C Subject/Professional/Practical Skills</p> <ol style="list-style-type: none">1. Elicit and express requirements for computer-based systems2. Work (alone and in teams) in disciplined manner on IT development projects3. Model and design procedures, data structures, information systems4. Follow system development methods5. Create high-level and low-level designs that correspond to stated requirements6. Design, build and deploy databases that support application requirements7. Integrate design methods, working methods and toolsets to achieve coherent and focused practise in application of IT technologies in business contexts	<p>Teaching/learning methods and strategies</p> <p>The specific skills inculcated in the award can be grouped into three major categories:</p> <ol style="list-style-type: none">1. generic skills in IS analysis, design, and implementation, leading towards general competency in IS practice2. specific skills in application development such as database applications, Internet, particularly Web, analysis and design, leading towards competency in usability and functionality design3. skills relating to the application of information technology and information systems to business objectives and the issues surrounding their use. <p>These three skill sets are developed throughout the course in parallel from the beginning.</p> <p>The development of these skill sets requires focused material delivery and assignment design on the part of tutors, extensive student lab work and group work, exposure to real-world business requirements, and commitment and creativity on the part of students.</p> <p>Assessment</p> <p>For the development of these skills, coursework is particularly important., though students' ability to reflect on experience and extend it to an analysis of novel domains is also something that can be examined formally. Subject-specific skills are principally assessed as follows:</p> <ul style="list-style-type: none">▪ Development of a basic skill set for building IS, including abilities to model, analyse, design and construct systems, to use tools, methods, and packages effectively, and to work effectively individually and in teams (1 – 6,) can be assessed in the Information Systems Development and Practise, Hypermedia IS, Electronic Commerce, CASE Tools, Compiler Design, Image Processing, Software Engineering Group Project, Concurrent and Parallel Systems, Comparative Information Systems Methodologies modules. Generally these skills are assessed in all modules within the programme. <ul style="list-style-type: none">• Integration of methods, tools and context (7) is particularly assessed in the Computing Project or the Information systems Dissertation.
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D Transferable Skills and other attributes

D Transferable skills and other attributes	Teaching/learning methods and strategies
<ol style="list-style-type: none">1. Communication Skills2. Self-management skills3. IT skills in context4. Problem-formulation and decision making5. teamwork	<p>Students' communication skills are developed through:</p> <ul style="list-style-type: none">▪ participation in tutorials and other discussion forums▪ negotiation of work plans and requirements with team members▪ presentation of work to peers, staff▪ writing essays, reports, and examination answers <p>Students' self-management skills and teamwork are developed through:</p> <ul style="list-style-type: none">▪ self-managed practical work▪ effective participation in tutorial and laboratory sessions▪ methodical execution of analysis and design tasks▪ synchronising with others in team work▪ scheduling assignment work and revision <p>Students' IT skills and Problem formulation and decision making are developed through:</p> <ul style="list-style-type: none">▪ regular involvement in systems analysis and design activity▪ use of range of system development tools, methods and packages▪ cumulative mastery of tools and methods▪ use of online teaching materials▪ sustained use of the Internet▪ emphasis on user-centred and accessible systems design work▪ building systems to a user-focused specification <p>Assessment</p> <p>All of the skills are demonstrated in varying degrees in all assessments with the exception of teamwork, which is required in important elements of the coursework, and IT skills, needed for most of the coursework. It would be impossible to progress to completion on the award without demonstrating a basic competence in all of these skills.</p>

Section 4: Programme structure

Note: This structure is indicative and subject to change

Professional, Legal & Commercial Issues UFIE9K-10-3	20-40 credits Option 1	20 credits Option 2	50-70 credits Option 3
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Option 1 taken from	
UFCE3B-40-3	Computing Project
UFIE8Y-20-3	Information Systems Dissertation

Option 2 taken from	
UFCE4W-10-3	Advanced Databases
UFIE86-10-3	E Commerce Special Interest Groups
UFIE9F-10-3	Hypermedia Information Systems

Option 3 taken from	
Option 2	Not already taken
UFCE4J-20-3	Formal Language Processing
UFCE4K-20-3	Design and Analysis of Algorithms
UFCE4L-20-3	Software Engineering Project
UFCE4M-10-3	Concurrent and Parallel Systems
UFCE4N-10-3	Compiler Design
UFCE4P-10-3	Object Oriented Databases
UFCE4Q-10-3	Distributed and Parallel Databases
UFCE4R-10-3	Intelligent Systems
UFCE4S-10-3	Requirements Engineering
UFIE95-20-3	Information Systems in Society
UFIE98-20-3	Information Systems Development & Practice 3
UFIE9H-10-3	Computing & Law
UFIE9L-10-3	Information Technology Audit
UFIE9M-10-3	Technical Editing
UFSEJ6-10-3	Advanced Distributed Systems
UMAC3J-20-3	Advanced Management Accounting

PLEASE NOTE: REFER TO THE FACULTY ON-LINE INFORMATION SYSTEM FOR UP-TO-DATE STRUCTURE INFORMATION

<http://www.cems.uwe.ac.uk/exist/index.xql>

Section 5: Entry requirements

The entry requirements are the university's minimum requirements for entry to a degree.

Section 6: Assessment Regulations

- a) **MAR** Wholly in accordance
- b) **Approved MAR variant (insert variant)**
- c) **Non MAR**

Section 7: Student learning: distinctive features and support

Within the Faculty of Computing Engineering and Mathematical Sciences, student learning is supported in the following distinctive ways:

- Through provision of a large Open Access Laboratory (3P10) containing 50 machines that provide students with access to a wide range of computer-based applications, and a Multimedia Laboratory (3P28) with specialist provision in multimedia systems;
- through provision of nine other, frequently available, computer laboratories that provide similar access;
- through the CEMS System Support Helpdesk that provides a range of support for learning to students including:
 - support for a wide range of applications used by the students;
 - help in the form of Assistants who are trained to resolve many common student problems;
 - and help in the form of a large set of "Helpsheet Documents", developed over a number of years, that cover a variety of common student requests for information;
- in level-3 modules there is scope for engagement with current research undertaken by the staff of the faculty.
- The development of UWEonline as a virtual learning environment to support student learning on modules in the faculty and university.

Section 8 Reference points/benchmarks

The QAA Computing Benchmarking document recognizes that computing awards may be placed on a spectrum, with those covering a broad range of computing topics at one end, and those focusing on specialist areas, e.g. safety-critical systems, at the other. This award lies somewhere in between the two extremes: it provides a reasonably broad coverage of the main areas of computing. The specified aims, objectives and philosophy lead to an award which both conforms to the principles of course design in the benchmark statement, and covers a significant part of Annex A (Body of knowledge) of the QAA Computing Benchmark Statement.

The Award combines modules from both Computing and Information Systems fields to cover major aspects of both disciplines. The widely diverse modules used within the award give breadth of study. Depth of study derives from the continuation of modules that build on prior experience.

The QAA Subject Benchmark Statement for Computing is applicable to this proposal. The design team has considered it in drawing up the structure of the proposed award, and is of the view that the proposal falls clearly within the scope of the benchmarks, as regards curriculum, teaching and learning, and the benchmarking standards themselves.

The benchmarks also contain (section 5) statements of the standards expected of graduates at both modal and threshold levels. The team is of the view that graduates of the programme will be able to meet the required standards.

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 individual modules can be found in module specifications. These are available on the University Intranet.

Programme monitoring and review may lead to changes to approved programmes. There may be a time lag between approval of such changes/modifications and their incorporation into an authorised programme specification. Enquiries about any recent changes to the programme made since this specification was authorised should be made to the relevant Faculty Administrator.