

## PROGRAMME SPECIFICATION – Undergraduate COURSES

1	<b>Awarding institution/body</b> – University of Worcester
2	<b>Teaching institution</b> - University of Worcester
3	<b>Programme accredited by</b> NA
4	<b>Final award</b> - BSc (Hons)
5	<p><b>Programme title</b>            BSc (Hons) Computing            BSc (Hons) Computer Games Design &amp; Development            BSc (Hons) Web Development</p>
6	<p><b>Pathways available</b>  <b><u>BSc. (Hons) Computing.</u></b>  <i>(Generic award). Available in <u>Single, Major, Joint, Minor</u> pathways.</i></p> <p><b><u>Computing Specialist Awards.</u></b>  <i>Available in <u>Single Honours</u>: pathway only:</i></p> <p>BSc (Hons) Computer Games Design &amp; Development            BSc (Hons) Web Development</p>
7	<b>Mode and/or site of delivery</b> Taught modules at the University of Worcester
8	<b>Mode of attendance</b> FT, SW, PT <sup>1</sup>
9	<p><b>UCAS Code</b></p> <p>BSc (Hons) Computing – G400            BSc (Hons) Computer Games Design &amp; Development – G451            BSc (Hons) Web Development – G452</p>
10	<b>Subject Benchmark statement and/or professional body statement</b> Computing Benchmark Statement 2007, QAA.
11	<b>Date of Programme Specification preparation/revision</b> July 2011/updated Feb 2012

### 12 Educational aims of the programme

This programme aims to develop learners' appreciation of Computing as an integral part of commercial and industrial activities and also as a pervasive part of everyday life in this fast-changing field. It aims to meet Computing Curriculum recommendations and aims developed by two professional bodies (IEEE and ACM)<sup>2</sup>.

Our aims are:

1. Preparation for, and development of, a career in Computing, such that students will be able to make effective and professional contributions to interdisciplinary groups engaged in computing projects.
2. To lead to a better understanding of technical decisions involving commercial Computing and the development of an awareness of various types of technologies.
3. To make our students aware of the impact, challenges presented, and the increasing pervasiveness and ubiquity of computing in our contemporary world.
4. To develop students who can systematically and critically analyse and discriminate between options for various computer-based problems and devise appropriate solutions.
5. To provide students with the competence to undertake Computing projects on an

<sup>1</sup> FT, full time. SW, sandwich. PT, part time.

<sup>2</sup> Association for Computing Machinery & IEEE Computer Society, Computer Science Curriculum 2008: An Interim Revision of CS 2001, Report from the Interim Review Task Force, December 2008, <http://www.computer.org/portal/web/education/Curricula;jsessionid=d1a6005da0be07c12560e4eb298e>

- individual basis as well as the ability to effectively work in teams.
- To develop an appreciation of professional, moral and ethical issues involved and a sensitivity to changes in computing and information technology.

### 13 Intended learning outcomes and learning, teaching and assessment methods

Our students are expected to develop a spectrum of skills and abilities, grounded in intellectual tasks (SB 3.1). These can be categorized as (i) knowledge and understanding (ii) cognitive abilities and skills related to intellectual tasks, (iii) practical skills related to the discipline of Computing, (iv) transferable skills which may be learned within the context of Computing, but which may be deployed in other contexts.

<p><b>Knowledge and understanding:</b></p> <ol style="list-style-type: none"> <li>Appreciation of the Concepts of Computing and their relevance to everyday life</li> <li>Demonstration of knowledge and understanding of theories, concepts, principles and facts relating to computing and computer applications</li> <li>Knowledge of core disciplines of computing including: programming, games, web, database and networking.</li> <li>An understanding of the practical requirements for computer-based systems including the recognition and analysis of criteria and models leading to specifications used in the solution of specific problems.</li> <li>An understanding of key technology changes affecting the running of computer operations within organisations and how this could affect their future software implementations.</li> </ol>	<p><b>Examples of learning, teaching and assessment methods used:</b></p> <ul style="list-style-type: none"> <li>All programmes contain varied approaches to learning, teaching and assessment designed to encourage student to progress as individuals within their capabilities, and to achieve a qualification.</li> <li>Assessment is by a variety of means including essays, oral presentations, group work, research-driven tasks and open and closed-book examinations.</li> <li>Tutor support is deployed at all levels to assist students' progression towards achieving a broad but deep understanding of the field of Computing.</li> <li>Formal lectures which encourage student interaction and discussion.</li> <li>Inter-active materials available on VLE.</li> <li>Move towards more online submission and marking so students can more easily access their feedback.</li> <li>Using recent news articles and case studies on how changes with technology (such as cloud computing) can have positive and negative effects on business issues (such as sustainability), and develop alternative strategies that businesses could implement (COMP3271).</li> </ul>
<p><b>Cognitive and intellectual skills:</b></p> <ol style="list-style-type: none"> <li>Evaluation and deployment of approaches to modelling in order to design computer-based systems, to understand these systems, and to communicate about these systems and to predict their behaviour</li> <li>Appreciation of the role of critical evaluation and testing in ensuring that computer-based systems meet the criteria for their defined use and future developments</li> <li>Understanding of methods and tools through the deployment of appropriate theory, practices and approaches, to specify, design, implement and evaluate computer systems</li> </ol>	<p><b>Examples of learning, teaching and assessment methods used:</b></p> <ul style="list-style-type: none"> <li>Student activities including individual and group exercises, the use of guided worksheets and direct input into sessions. These may be paper-based or computer-based.</li> <li>Research-based workshop activities, following which students may be invited to contribute to a "plenary discussion" (COMP1211, COMP3201, COMP3008).</li> <li>We encourage our students to engage in peer-support, through both informal contacts (email and direct), but also through the use of discussion groups (supported by the VLE). A discussion group is established for each specialist course, to allow students to share thoughts and ideas <i>between levels</i>. This is aimed to develop <i>learning communities</i> within</li> </ul>

<ol style="list-style-type: none"> <li>4. Reflection on and communication of Computing principles, orally, textually or using electronic media, including an assessment of the impact of new technologies</li> <li>5. Recognition of the professional, economic, social, environmental, moral and ethical issues involved in the sustainable deployment of computing</li> <li>6. Problem solving in dealing with complex issues of systems development and design.</li> </ol>	<p>the breadth of Computing courses.</p> <ul style="list-style-type: none"> <li>• Tutors and students are encouraged to make use of the VLE to incorporate electronically mediated group work and collaborative learning (SB 5.9). This has been informed by expertise within the department and institution, and includes support for both tutors and students.</li> <li>• Assessment guides learning (SB 5.4). Modules typically include a strong element of formative assessment. This is achieved through (i) in-session discussions and exercises, (ii) on-line tests and presentations. Also, many modules employ a dual-assignment assessment, where the first assignment provides formative as well as summative feedback to the students.</li> <li>• It is the norm for modules to assess theory and practice in some combination (SB 5.5) through the implicit dual assignment assessment procedure.</li> <li>• Inclusion of peer-assessment in formative feedback to encourage students to review each others work before the final submission (COMP3202).</li> <li>• Students are encouraged to reflect on how social and technical changes can have ethical, sustainability and moral impact on themselves, society and business (COMP3201, COMP3271)</li> </ul>	
<p><b>Practical skills relevant to employment:</b></p> <ol style="list-style-type: none"> <li>1. Initiation and implementation of projects</li> <li>2. The operation, specification, design, construction and documentation of computer-based systems and applications</li> <li>3. The evaluation of systems in terms of quality and trade-offs</li> <li>4. The recognition of risks or safety aspects associated with various computer-based systems</li> <li>5. Understanding of practical requirements for computer-based systems including the recognition and analysis of criteria leading to specification used in the solution of specific problems.</li> </ol>	<p><b>Examples of learning, teaching and assessment methods used:</b></p> <ul style="list-style-type: none"> <li>• Operation of computer applications is found in most modules. Specific examples include the use of CASE tools (COMP2213), project management tools (COMP2213) and Immersive Environment development tools (COMP1251, 2151, 3151) see SB 5.6.</li> <li>• The risks and safety aspects within computing applications and approaches are discussed within COMP3221</li> <li>• Some modules will also provide basic preparation for professional examinations such as CISCO and CIP (COMP2221).</li> <li>• Understanding of how Computing and ICT can be used to solve sustainability issues in society and business and how they can be implemented (COMP3271, COMP3242).</li> <li>• Encourage students to gain practical skills by engaging in work placement (COMP3200) or developing an actual computing artifact (such as a web site) for a client (COMP3008).</li> </ul>	
<p><b>Transferable skills:</b></p> <ol style="list-style-type: none"> <li>1. Information-retrieval skills such as the use of browsers and search engines</li> <li>2. Numeracy and literacy in both</li> </ol>	<p><b>Examples of learning, teaching and assessment methods used:</b></p> <ul style="list-style-type: none"> <li>• The opportunity to learn a variety of methods for online retrieval and research from Internet sources, online libraries and other methods</li> </ul>	

<p>understanding and presenting cases of both a qualitative and a quantitative nature</p> <ol style="list-style-type: none"> <li>3. The ability to work as a member of a team, recognizing different roles within the team, and various ways of organizing teams</li> <li>4. Management of individual learning and development, including organization and time-management</li> <li>5. Appreciation of the need for continuous professional development and lifelong learning</li> <li>6. Research skills such as planning research, gathering and analysis of primary data. These also include secondary research and how to manage a critical literature review.</li> <li>7. Future generators of sustainable values.</li> </ol>	<p>and to incorporate this directly into assignments (COMP1211).</p> <ul style="list-style-type: none"> <li>• Several modules involve formal group work including assessment (e.g. the mandatory module COMP3201, Professionalism in Context, COMP2251, Foundations of Game Design).</li> <li>• Written assessments in a variety of formats (essay, report, learning journal) are used to develop numeracy and literacy skills.</li> <li>• Management of individual learning is achieved through structured tutor support in learning activities, through meeting assignment deadlines and through the planning and production of the Computing Project.</li> <li>• Personal development is introduced in the induction period, and developed through the mandatory module COMP3201.</li> <li>• The Induction process aims to introduce students into several aspects of learning and study: (i) Time Management related to assignment hand-in dates, (ii) The nature of learning, including concepts of multiple intelligences, levels of learning, experiential and collaborative learning approaches.</li> <li>• Explicit attention has been given to the plagiarism issue. One level 4 mandatory module (COMP1211) explicitly explores this issue.</li> <li>• The skills of researching, synthesising and citing sources of information are highlighted within the mandatory module COMP1211.</li> <li>• Secondary research is a part of most module assignments. Specific research skills are developed in the Computing Professional, COMP1211, and are applied in the Computing Project module COMP3008.</li> <li>• Project management and the ability to work at various team levels is an important part of running a development project, so this skill set has been incorporated into the programme (COMP2213).</li> </ul>	
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Students taking the generic BSc. (Hons) Computing degree will have the opportunity to explore a range of specific aspects within the field of Computing. They may also choose to focus their study around one area of specialism.

Students who take the Specialist Awards (Web Development and Computer Games Design & Development) will develop a deeper level of knowledge and understanding of a specialism within the field of Computing. The Specialist Awards are distinct in their subject content supporting individual student interest and progression into distinct career opportunities.

A matrix mapping the Learning Outcomes Developed and Assessed by each Module is contained within the Course Handbook. The Handbook also contains an overview of learning and teaching methods, integration of practice and theory, integration of research into the modules, BIT Project overview, and sustainability overview.

**14 Assessment Strategy**

The Assessment strategy has been designed to provide students with a variety of challenges appropriate to students on a programme which is both academic and vocational (SB 5.3). The programme's assessment strategy has been considered within the context of UW's Learning, Teaching and Assessment Strategy and Assessment Policy (UW Grade descriptors). Assessment criteria and grade descriptors are provided for each assessment.

The range of assessment specified in the module outlines have been developed in order to support the pedagogical approaches employed and which are appropriate for the nature of the Computing discipline topic covered. Assessments for the individual modules have been designed to enable students to demonstrate that they successfully met the learning outcomes. Each module outline contains an assessment strategy outlining the nature of the assessment exercises it employs and the respective weighting of each assessment item, as well as a sample assessment. Emphasis on assessments is placed on development of analytical skills and combining theory and practice. The styles of each assessment is determined by the module leader and takes into account a myriad of factors, including learning outcomes, content of the module and teaching and learning styles. For example, modules in programming lend themselves to more practical-based project assessments compared to a case-study assessment.

Because of the unique nature of Computing, emphasis is placed on practice and project-based learning and assessment. The use of formative assessment is especially important and practical projects are incorporated in the programme. Other areas of emphasis include:

1. By explicit assessment approaches e.g., the use of "Learning Journals" where students are encouraged to write in a critical, evaluative and reflective way, and also to reflect on their learning processes,
2. Support formative assessment through on-line exercises, multiple choice questions
3. Facilitate discussions and provide a forum for on line tutor-to-student and peer-to-peer support
4. An approach of some module assignments, where the first assignment typically has a theoretical context, while the second may be grounded in practise

The matrix mapping of the various assessments by each Module as well as marking criteria overview is contained within the Course Handbook).

## **15 Programme structures and requirements**

### **15.1 Overview of the 3 Courses**

The individual courses should be viewed as components of a larger scheme presenting an integrated platform designed to cater for mainstream (BSc Computing) and specialist routes in BSc Web Development and BSc Computer Games Design & Development. The modules (and their content) have been chosen to allow an efficient integration, to support the three courses. For example, in the Computer Games Design & Development course, level 5 and 6 modules have been crafted to be mutually supportive: Both the mandatory programming and the games development modules share an object-oriented approach; also the mandatory programming and games modules share a common event-driven approach. Students in the BSc Computing degree are able to select more module options in order to allow better tailoring of interests to meet their career objectives. Students in BSc Web Development and BSc Computer Games Design & Development take a more structured set of modules which serves a strong preparation for employment in various industry positions within these fields.

### **15.2 The BSc. (Hons) Computing generic award**

This award allows flexibility to study a broad range of aspects of modern-day computing. Year one provides essential Computing knowledge and skills, creating a solid foundation for future

academic study and employment. Years two and three provide the opportunity to specialise in particular areas of interest. Graduates have a variety of career opportunities including: website design, systems analysis, database design, software development, security analysis and IT services.

This is available in full-time or part-time mode and may be taken as a Single, Major, Joint or Minor pathway.

Single Honours students only may also take the course in sandwich mode with an optional one year placement between levels 5 and 6.

### **15.3 The BSc. (Hons) Computing Specialist Awards**

#### **BSc Web Development**

This degree explores aspects of the Web arena including the aesthetics of design, the underlying technical knowledge required and the importance of a sound user-focused systems approach. Year one provides essential Computing knowledge and skills, creating a solid foundation for future studies and employment. Years two and three allow the student to specialise in areas of Web Development. Career options include: Web design and development, systems analysis, e-business development, e-marketing, web architecture, software development and IT services.

These are available as Single Honours only. They may be taken in full-time, part-time mode or sandwich mode with an optional one year placement between levels 5 and 6.

#### **BSc Computer Games Design & Development**

This degree aims at providing a balanced education across the domains of game design and development, developing both domain-specific and transversal skills aimed at enhancing employability and self-employment opportunities in the Games Industry, the Interactive Media industry, and related domains of IT and software development. The degree takes into account the current development of the Games Industry, such as the massive growth of the social networking and mobile games industries in the past three years, and the current importance of developer-to-player retail channels for the sake of self-employment opportunities (e.g. Microsoft's Xbox Live Arcade XBLA, and Apple's AppStore).

The degree relies on a robust three-year software development and engineering trail of modules, which further enhances cross-domain employability and self-employment opportunities. Focusing on the Games Industry, based on the job profiles defined in Skillset 2009 the team emphasizes that our students would be prepared for the following roles: game designer; scripter; content programmer; games tester; general programmer; quality assessor. It is focused on the software development and game design branches of the computer games domain, with a 50% - 50% balance. The game design modules positively engage students in creative learning, preparing them to engage in the creative domains of the games and interactive media industries.

These are available as Single Honours only. They may be taken in full-time, part-time mode or sandwich mode with an optional one year placement between levels 5 and 6.

See end of document for level 4, 5 and 6 Award Maps.

See Course Handbook for excluded combinations and joint modules.

## 16 QAA Academic Infrastructure

The 2007 QAA Subject Benchmark statements for Computing<sup>3</sup> bachelor's degrees with honours articulate the knowledge, skills and categories of achievement to be expected of successful honours graduates in the field. These have been used to craft module learning outcomes and content as well as learning, teaching and assessment strategies of all modules, including core modules as a discrete subset in their own right.

The QAA Code of Practice for the assurance of academic quality and standards in higher education has informed the writing of this programme, in particular with reference to Section 6 'Assessment of Students' and Section 9 'Work-based and placement learning'.

The programme conforms to the requirements of the Framework for Higher Education Qualifications (FHEQ), and thus aims to support Honours graduates to:

- Develop an understanding of a complex body of knowledge, some of it at the current boundaries of an academic discipline
- Develop analytical techniques and problem-solving skills that can be applied in many types of employment
- Evaluate evidence, arguments and assumptions, to reach sound judgements, and to communicate effectively
- Develop the qualities needed for employment including the exercise of personal responsibility and decision-making in complex and unpredictable circumstances.
- The programme aims to meet Computing Curriculum recommendations and aims developed by two professional bodies (IEEE and ACM)<sup>4</sup> A reference mapping of the industry educational domains against module content can be found in the Course Handbook.
- The BSc Computer Games Design & Development module content is based on the skills, qualifications and experience required to work in Interactive Media and Computer Games as defined in the "2009 National Occupational Standards for Games and Interactive Media"<sup>5</sup> defined by the Sector Skill Council for Creative Media (SkillSet 2009, for brevity), and based on the "2008 IGDA Curriculum Framework" defined by the International Game Developer Association Education Committee. It fully or partially fulfills all the learning outcomes, course, resources and teaching requirements and quality criteria specified for the following Skillset 2009 modules: "Programming and mathematics for computer games"; "High Level Games Programming"; "Game Creation Process." A reference mapping can be found in the Course Handbook.

## 17 Support for students

### 17.1 General approaches to support

Our fundamental approach to student support is centred on the need to motivate our students (SB 5.11). We acknowledge that students learn in different ways and also have different expectations of their learning experience. Some respond best to a 'traditional' lecturing approach; others are motivated by learning and teaching contextualised in an industrial or an academic context. Others respond to an academic research approach. Our modules provide a spectrum of approaches designed to engage with a wide range of student abilities. Yet we highlight the need for *active learning* where students are invited to participate in learning activities, and also to reflect (at a meta-cognitive level) on their learning process.

<sup>3</sup> Available from the QAA Website at

<http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/computing07.pdf>

<sup>4</sup> Association for Computing Machinery & IEEE Computer Society, Computer Science Curriculum 2008: An Interim Revision of CS 2001, Report from the Interim Review Task Force, December 2008,

<http://www.computer.org/portal/web/education/Curricula.jsessionid=d1a6005da0be07c12560e4eb298e>

<sup>5</sup> National Occupational Standards for Interactive Media and Computer Games

<http://www.skillset.org/standards/standards/IM/>

## 17.2 Student Induction

The induction process within Computing consists of a week of activities designed to inform students what is expected of them in a Higher Education setting (SB 5.13, 5.14). Discussions of essay and report writing, working with others while avoiding plagiarism, and how to strive to achieve excellence are vital components of our induction process. Important here is Time Management, where we encourage students to organize their studies to meet the assessment deadlines which may tend to be clustered in time.

The following activities and documents have been put in place to provide support for undergraduate students within Computing at the Worcester Business School.

- Induction programme including inputs from Student Services
- Course handbook – Section 1
- Module outlines include module code, module title, level, planned teaching activities, attendance requirements, assessment brief, assessment criteria and reading lists
- Learning and study guides, including guides for the Computing Project and for Direct Entrant students
- Library, IT, Media and Print support is provided by Information Learning Services (ILS) staff through an Information Desk and Study Guides
- Student representation on Course Management Committee to address course-wide
- A nominated personal tutor to provide pastoral support, academic advice and guidance, and Personal Development Planning, as appropriate
- Via Registry Services, students can obtain details of module availability, registration and results via the student online learning environment (SOLE page)
- A range of support services, including finance and accommodation advice
- Student and academic support, representation and social networking via the Students' Union
- Equal Opportunity via the Disability and Dyslexia Service, which implements codes of practice in relation to disability, racial and other forms of discrimination and also provides practical support and guidance for students with learning difficulties
- All students have the opportunity to study abroad via the International Centre
- Career Services offer one-to-one drop-in advice and information and publishes career events, activities and job opportunities. Worcester Business School also has its own intranet which advertises placement and career opportunities specifically for Computing and Business Management students
- A Virtual Learning Environment – VLE to provide module-specific material, documents, activities and networking, as well as a more general announcements and updates.

## 18 Admissions policy, criteria and procedures

### Admissions Policy for the course

The University aims to be accessible; it is committed to widening participation and encouraging diversity in the student population. Worcester Business School works closely with central student support services including the Admissions Office, the Disability and Dyslexia Service and the International Centre to support students from a variety of different backgrounds. We actively encourage and welcome people from the widest range of economic and cultural backgrounds and value the contribution of mature learners.

### Entry requirements

The University's standard entry requirements apply: 4 GCSEs at Grade C or above plus a minimum of 2 and maximum of 3½ A Levels or equivalent Level 3 qualifications. The current UCAS Tariff requirements for entry to the course are published in the prospectus.

Details of acceptable level 3 qualifications, policy in relation to mature students or applicants with few or no formal qualifications can be found in the prospectus or on the University webpages. Information on eligibility for accreditation of prior learning for the purposes of entry or advanced standing is also available from the University webpages or from the Registry Admissions Office (01905 855111).

University of Worcester welcomes applications from mature students. Mature students, who fulfil the standard entry requirements as detailed above, apply through UCAS. Students with few or no formal qualifications are asked to contact the Admissions Office with details of the work they have undertaken, including caring or organised voluntary work, and any other relevant experience and/or qualifications gained since leaving school. An advisory interview will be arranged to discuss possible options. These options include an Access course or Foundation Year at a local Further Education College or an Exploratory Essay and interview, where appropriate.

#### Admissions procedures

The University encourages applicants to attend visit days and also a selection interview is normally required.

Full-time applicants apply through UCAS:

(Course codes: BSc (Hons) Computing – G400, BSc (Hons) Computer Games Design & Development – G451, BSc (Hons) Web Development – G452)

Part-time applicants apply directly to University of Worcester (UW)

#### Admissions/selection criteria

Applicants will be selected according to their qualifications (actual or predicted) at A levels or equivalent along with successful completion of a short face-to-face interview (or essay).

### **19 Methods for evaluating and improving the quality and standards of teaching and learning**

Mechanisms for review and evaluation of teaching, learning and assessment, the curriculum and outcome standards include

- Module feedback
- Annual Course Evaluation Report completed by Course Leader
- Periodic Review including external scrutiny
- Peer teaching observation
- External Examiners' Reports
- Academic staff annual appraisal
- Staff Development Away Days and other events
- WBS Policy on Validation (Module Outlines and Assignment Briefs) and Moderation of Student Work

Committees with responsibility for monitoring and evaluating quality and standards:

- School Departmental Quality Assurance Committee
- School Learning, Teaching & Student Experience Committee
- School Board
- School Post Results Moderation Group
- Computing Course Management Committee
- Academic Standards & Quality Enhancement Committee
- Ethics Committee

Mechanisms for gaining student feedback on the quality of teaching and their learning experience:

- Course Management Committee

- Module feedback, including module feedback questionnaires
- Computing Course Committee
- Meetings with module tutors and personal tutor
- National Students Survey
- Induction, exit and other ad hoc surveys
- StARs (Student Academic Representatives)

Feedback to students concerning decisions, changes and action points will be provided by direct feedback from the student representatives, the minutes of the Course Management Committee meeting and the Annual Evaluation Report.

## 20 Regulation of assessment

### Requirements to pass modules

- Modules are assessed using a variety of assessment activities which are detailed in the module specifications.
- The minimum pass mark is D- for each module.
- Students are required to submit all items of assessment in order to pass a module, and in some modules, a pass mark in each item of assessment may be required.
- Some modules may have attendance requirements which will be indicated on the module outline.
- Full details of the assessment requirements for a module, including the assessment criteria, are published in the module outline.

### Submission of assessment items

- Students who submit course work late but within 5 days of the due date will have work marked, but the grade will be capped at D- unless an application for mitigating circumstances is accepted.
- Students who submit work later than 5 days but within 14 days of the due date will not have work marked unless they have submitted a valid claim of mitigating circumstances.
- Students who fail to submit an item of assessment lose their right to reassessment in that module, and will be required to retake the module.
- For full details of submission regulations see [University Regulatory Framework](#).

### Retrieval of failure

- Students are entitled to resit failed assessment items for any module that is awarded a fail grade, unless the failure was due to non-attendance or non-submission.
- Reassessment items that are passed are graded at D-.
- If a student is unsuccessful in the reassessment, they have the right to retake the module (or, in some circumstances, take an alternative module).

### Requirements for Progression

- Students at Level 4 may be permitted to progress to Level 5 when they have passed at least 90 credits at Level 4.
- Students at Level 5 may be permitted to progress to Level 6 when they have passed at least 90 credits at Level 5.
- A student who fails 90 credits or more due to non-submission will be required to withdraw from the University.
- Students who pass less than 90 credits but have submitted all items of assessment will be required to retake modules.

### Requirements for Awards

Award	Requirement
CertHE	Passed 120 credits at Level 4 or higher

DipHE	Passed a minimum of 240 credits with at least 105 credits at Level 5 or higher
Degree (non-honours)	Passed a minimum of 300 credits with at least 105 credits at Level 5 or higher and a minimum of 60 credits at Level 6
Degree with honours	Passed a minimum of 360 credits with at least 105 credits at Level 5 or higher and a minimum of 120 credits at Level 6

### Classification

The honours classification will be determined by whichever of the following two methods results in the higher classification:

- Classification determined on the profile of the best grades from 45 credits attained at Level 5 and the best grades from 120 credits at Level 6. Level 5 and Level 6 grades count equally in the profile.
- Classification determined on the profile of the best grades from 120 credits attained at Level 6 only.

Institute-level Assessment Boards review and confirm results for modules, and the Board of Examiners considers students' mark profiles to make decisions about progression, awards and degree classifications as appropriate.

## 21 Indicators of quality and standards

- The University underwent a QAA Institutional Audit in March 2011. The audit confirmed that confidence can be placed in the soundness of the institution's current and likely future management of the academic standards of its awards and the quality of the learning opportunities available to students. The audit team highlighted several aspects of good practice, including the student academic representative (StARs) initiative, the proactive approach which supports the student experience for disabled students, the comprehensiveness of the student online environment (SOLE), the wide range of opportunities afforded to students to enhance their employability, the institution's commitment to enhancement, and the inclusive approach to working with its collaborative partners.
- Annual External Examiners' reports have been extremely supportive and complimentary particularly with respect to the mix of assessments and responsive and proactive approach to continuously improving the curriculum.
- Many members of staff engaged in developing the programme are actively engaged in relevant research, consultancy and professional practice in the disciplines of business management.
- The University of Worcester was successful in retaining liP recognition in 1999, 2002, 2005 and again in 2008 - organisations must be reviewed by an external, independent Assessor once every three years to ensure that the liP standard is being maintained and that practices are being evaluated and improved.
- Careers Destination Survey for 2009 typically show employment rates within six months of graduation of 80%. First destinations include roles as IT technician, IT administrator, IT and internet support, Systems web design, Software engineer and Systems support<sup>6</sup>

## 22 Employability and graduate destinations

- The School has a Director of Business and Professional Development in order to promote closer links with employers. This role is supported by a newly appointed Business Development Consultant and the generation of a contact database.

- The optional placement year, available to Single Honours students taking either the generic or Specialist Awards in Computing, is an opportunity for students and staff to further engage with the real world of work.
- Short-term work placement and job opportunities are advertised in WBS's VLE site for existing students.
- The School has ongoing links with a recruitment consultant who advises on course content and design, and, through staff's business and professional activities, with a range of employers, business and management consultants and trainers, professional and commercial organisations including Chambers of Commerce and Business links.
- The subject area positively supports and engages in the Enterprise events and summer schools in which students have the opportunity to meet, work with, and be assessed by employers and entrepreneurs.
- The School's specialist Research and consultancy Centre, the CPW Consulting Centre has a wide range of projects and opportunities to provide links with employers. This includes an important focus of projects with the West Mercia police constabulary through the Shared Police and Higher Education (SPHERE) partnership.
- Care has been taken to integrate the University's Academic Standards and Quality Enhancement Committee's *"Developing a Strategic Approach to Student Employability Support Statement"*, "We will promote the use of the University's newly accredited work-based learning framework, and build upon its existing placement and work-based learning opportunities. All undergraduate courses will include either a mandatory work-based learning module or have learning from work as part of their programmes. Learning from work modules may be adopted, or elements of learning from work incorporated, into programmes. These could include experience in work, volunteering or enterprise activity."<sup>7</sup>

**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 s/he 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 outlines and Section 3 of the course handbook. The accuracy of the information contained in this document is reviewed by the University and may be checked by the Quality Assurance Agency for Higher Education.

<sup>6</sup> Available from University, "Where have Worcester Graduates Gone, Final Destination of 2009 Graduates

<sup>7</sup> AQU, *Developing a Strategic Approach to Student Employability Support Statement*, Section 4.3

## APPENDIX: AWARD MAPS

### BSc COMPUTING (Single Honours, Major, Joint, Minor)

Year: 2011

Last Updated:

April 2011

LEVEL 4							
Module Code	Module Title	Credits	Status (Mandatory (M) or Optional(O))				Pre-req
			Single	Major	Joint	Minor	
COMP1211	The Computing Professional	30	M	O	O	O	None
COMP1212	Database Applications	15	M	O	O	O	None
COMP1231	Introduction to Application Development	15	M	O	O	O	None
COMP1241	Introduction to Web Development	15	M	O	O	O	None
COMP1251	Introduction to Game Design & Development	15	M	O	O	O	None
<b>Optional Computing Module Choices</b>							
COMP1242	Creative Computing	15	O	O	O	O	None
COMP1243	Creative Media	15	O	O	O	O	None

#### Single Honours Requirements at Level 4

Single Honours students must take the Five Mandatory modules: COMP1211, COMP1212, COMP1231, COMP1241, COMP1251,

#### Major, Joint, Minor Pathway Requirements at Level 4

Major, Joint, Minor Pathway students must take 45 credits from the following: COMP1212, COMP1231, COMP1241, COMP1251.

#### **In Addition:**

All Single Honours/Major/Joint and Minor Students are permitted to choose one or two Free Choice modules totalling 15 or 30 credits at Level 4 from other Open modules within the Undergraduate Regulatory Framework or further Optional modules from Computing as listed above to make a level 4 programme of 120 credits in total

LEVEL 5							
Module Code	Module Title	Credits	Status (Mandatory (M) or Optional(O))				Pre-req
			Single	Major	Joint	Minor	
COMP2211	Systems Analysis & Design	15	M	M	M	O	None
COMP2213	Systems Development	15	M	M	M	O	None
<b>Optional Computing Module Choices</b>							
COMP2212	Database Management Systems	15	O	O	O	O	COMP1212 or COMP1112

COMP2221	Networks in Organisations	15	O	O	O	O	None
COMP2231	Object-Oriented Design & Development	15	O	O	O	O	COMP1231 or COMP1131
COMP2241	Interface Analysis	15	O	O	O	O	COMP1241 or COMP1141
COMP2242	Web Authoring & Design	15	O	O	O	O	COMP1241 or COMP1141
COMP2251	Foundations of Game Design	15	O	O	O	O	COMP1251 or COMP1132
COMP2252	Modelling and Simulation	15	O	O	O	O	COMP1231 or COMP1131
COMP2253	Foundations of Game Engineering	15	O	O	O	O	COMP1231 or COMP1131
COMP2361	Mobile Application Development	30	O	O	O	O	COMP1231 or COMP1241

#### Single Honours Requirements at Level 5

Students must take the TWO Mandatory modules **COMP2211 and COMP2213** plus 60 Computing credits (4 modules) from those listed above.

#### Major Pathway Requirements at Level 5

Students must take the TWO Mandatory modules **COMP2211 and COMP2213** plus 30 Computing credits from those listed above.

#### Joint Pathway Requirements at Level 5

Students must take the TWO Mandatory modules **COMP2211 and COMP2213** plus 15 Computing credits from those listed above.

#### Minor Pathway Requirements at Level 5

Minor Pathway students do not have any mandatory module requirements at Level 5. However, they must take 30 Computing credits from those listed above (either mandatory or optional modules).

**In addition:** All Single Honours/Major/Joint and Minor Students are permitted to choose two (2) Free Choice modules from other Open modules within the Undergraduate Regulatory Framework or two (2) further Optional modules from Computing as listed above (including the shared modules from other subject areas) subject to availability and satisfying any pre-requisites.

LEVEL 6							
Module Code	Module Title	Credit	Status (Mandatory (M) or Optional(O))				Pre-req
			Single	Major	Joint	Minor	
COMP3008	Computing Projects	30	M	M	O -or equiv in joint subject	NA	None

COMP3201	Professionalism in Context	15	M	M	M	O	None
COMP3202	Nature of Computing	15	M	O	O	O	None
COMP3221	Information Security	15	O	O	O	O	None
COMP3231	Advanced Object Oriented Design & Development	15	O	O	O	O	COMP2231 or COMP2134
COMP3241	e-Commerce Technologies	15	O	O	O	O	(COMP1131 or COMP1231) and (COMP1141 or COMP1241)
COMP3242	e-Business	15	O	O	O	O	None
COMP3243	Creative Web Design	15	O	O	O	O	None
COMP3251	Advanced Game Design	15	O	O	O	O	None
COMP3252	Modelling and Simulation	15	O	O	O	O	COMP1231 or COMP1131
COMP3253	Advanced Game Engineering	15	O	O	O	O	(COMP2253 or COMP2131) and (COMP2231 or COMP2134)
COMP3271	Information Technology for Business Innovation	15	O	O	O	O	None
COMP3361	Mobile Application Development	30	O	O	O	O	COMP1231 or COMP1241
<b>Work Placement Option</b>							
COMP3200	Work Placement	NA	O	O			Prep Workshop

### Single Honours Requirements at Level 6 (including Direct Entry)

Single Honours students must take the double mandatory Computing Projects module (**COMP3008**) and the mandatory modules **COMP3201** and **COMP3202**, plus four Optional modules from those listed above.

### Major Pathways Requirements at Level 6 (including Direct Entry)

Single Honours students must take the double mandatory Computing Projects module (**COMP3008**) and the mandatory module **COMP3201** plus three Optional modules from those listed above.

#### Joint Pathway Requirements at Level 6

Joint Pathway students must take the mandatory module **COMP3201** plus an Independent Study module COMP3008 or equivalent in their Joint subject).

Joint pathway students who choose to place their Independent Study in their other joint subject must choose two (2) additional Optional modules from those listed above (including those modules listed that are shared with another subject).

#### Minor Pathway Requirements at Level 6

Minor Pathway students do not have any mandatory module requirements at Level 6. However, they must take 30 credits (two optional modules) from those listed above.

Students may take an optional placement year after completion of Level 5 and prior to commencing Level 6 by registering for COMP3200

### AWARD MAP

#### BSc GAME DESIGN & DEVELOPMENT (Games)

#### BSc WEB DEVELOPMENT (Web)

Year: 2011

Last Updated:

N/A

LEVEL 4					
Module Code	Module Title	Credits	Status (Mandatory (M) or Optional(O))		Pre-req
			Games	Web	
COMP1211	The Computing Professional	30	M	M	None
COMP1212	Database Applications	15	M	M	None
COMP1231	Application Development	15	M	M	None
COMP1241	Introduction to Web Development	15	M	M	None
COMP1251	Introduction to Game Design & Development	15	M	M	None
<b>Optional Computing Module Choices</b>					
COMP1242	Creative Computing	15	O	O	None
COMP1243	Creative Media	15	O	O	None

#### GAMES DESIGN & DEVELOPMENT Requirements at Level 4

Students must take the FIVE Mandatory Computing modules: COMP1211, COMP1212, COMP1231, COMP1241, COMP1251.

#### In addition:

Students are permitted to choose two Free Choice modules totalling 30 credits at Level 4 from other Open modules within the Undergraduate Regulatory Framework or further Optional modules from Computing as listed above.

#### WEB DEVELOPMENT Requirements at Level 4

Students must take the FIVE Mandatory Computing modules: COMP1211, COMP1212, COMP1231, COMP1241, COMP1251

**In addition:**

Students are permitted to choose two Free Choice modules totalling 30 credits at Level 4 from other Open modules within the Undergraduate Regulatory Framework or further Optional modules from Computing as listed above.

<b>LEVEL 5</b>					
<b>Module Code</b>	<b>Module Title</b>	<b>Credits</b>	<b>Status</b> (Mandatory (M) or Optional(O))		<b>Pre-req</b>
			<b>Games</b>	<b>Web</b>	
COMP2211	Systems Analysis & Design	15	M	M	None
COMP2213	Systems Development	15	M	M	None
COMP2231	Object-Oriented Design & Development	15	M	M	COMP1231 or COMP1131
COMP2241	Interface Analysis	15	O	M	COMP1241 or COMP1141
COMP2242	Web Authoring & Design	15	O	M	COMP1241 or COMP1141
COMP2251	Foundations of Game Design	15	M	O	COMP1251 or COMP1132
COMP2253	Foundations of Game Engineering	15	M	O	COMP1231 or COMP1131
<b>Optional Computing Module Choices</b>					
COMP2212	Database Management Systems	15	O	O	COMP1212 or COMP1112
COMP2221	Networks in Organisations	15	O	O	None
COMP2252	Modelling and Simulation	15	O	O	COMP1231 or COMP1131
COMP2361	Mobile Application Development	30	O	O	COMP1231 or COMP1241

**GAMES DESIGN & DEVELOPMENT Requirements at Level 5**

Students must take the FIVE Mandatory Computing modules: COMP2211, COMP2213, COMP2231, COMP2251, COMP2253

**In addition:** Students are permitted to choose two (2) Free Choice modules from other Open modules within the Undergraduate Regulatory Framework.

**In addition:** Students are required to take one optional COMPUTING module from those listed above

**WEB DEVELOPMENT Requirements at Level 5**

Students must take the FIVE Mandatory Computing modules: COMP2211, COMP2213, COMP2231, COMP2241, COMP2242

**In addition:**

Students are permitted to choose two (2) Free Choice modules from other Open modules within the Undergraduate Regulatory Framework. They are also permitted one optional COMPUTING module as listed above.

<b>LEVEL 6</b>					
<b>Module Code</b>	<b>Module Title</b>	<b>Credits</b>	<b>Status</b> (Mandatory (M) or Optional(O))		<b>Pre-req</b>
			<b>Games</b>	<b>Web</b>	
COMP3003	Web Development Project	30	NA	M	None
COMP3004	Game Design & Development Projects	30	M	NA	None
COMP3201	Professionalism in Context	15	M	M	None
COMP3202	Nature of Computing	15	M	M	None
COMP3231	Advanced Object-Oriented Design & Development	15	M	M/O*	COMP2231 or COMP2134
COMP3241	e-Commerce Technologies	15	NA	M	(COMP1131 or COMP1231) and (COMP1141 or COMP1241)
COMP3242	e-Business	15	O	M	None
COMP3251	Advanced Game Design	15	M	NA	None
COMP3253	Advanced Game Engineering	15	M	NA	(COMP2253 or COMP2131) and (COMP2231 or COMP2134)
<b>Optional Computing Module Choices</b>					
COMP3221	Information Security	15	O	O	None
COMP3243	Creative Web Design	15	NA	M/O*	None
COMP3252	Modelling and Simulation	15	O	NA	COMP1231 or COMP1131
COMP3271	Information Technology for Business Innovation	15	O	NA	None
<b>Work Placement Option</b>					
COMP3200	Work Placement	NA	O	O	Preparatory Workshops

### **GAMES DESIGN & DEVELOPMENT Requirements at Level 6**

Students must take the following six Computing modules: COMP3004, COMP3201, COMP3202, COMP3231, COMP3251, COMP3252

***In addition:** Students are required to choose ONE optional Computing module from the above list.*

**WEB DEVELOPMENT Requirements at Level 6**

*Students must take the following five Computing modules: COMP3003, COMP3201, COMP3202, COMP3241, COMP3242, **PLUS** a choice of either (COMP3243 or COMP3231).\**

***In addition:** students are required to choose ONE optional Computing module from the above list*

*Students may take an optional placement year after completion of Level 5 and prior to commencing Level 6 by registering for COMP3200*