

**Programme Specification for BSc (Hons) Computing, BSc (Hons) Computer Games Design & Development, BSc (Hons) Web Development**

<p><b>This document applies to students who commence the programme in or after September 2017</b></p>
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1.	<b>Awarding institution/body</b>	University of Worcester
2.	<b>Teaching institution</b>	University of Worcester
3.	<b>Programme accredited by</b>	N/A
4.	<b>Final award or awards</b>	BSc (Hons)
5.	<b>Programme title</b>	BSc (Hons) Computing BSc (Hons) Computer Games Design & Development BSc (Hons) Web Development
6.	<b>Pathways available</b>	<ul style="list-style-type: none"> <li>• BSc (Hons) Computing (single, major, joint, minor)</li> <li>• BSc (Hons) Computer Games Design &amp; Development (single)</li> <li>• BSc (Hons) Web Development (single)</li> </ul>
7.	<b>Mode and/or site of delivery</b>	Taught modules at the University of Worcester
8.	<b>Mode of attendance</b>	Full time, part time, optional work placement year
9.	<b>UCAS Code</b>	BSc (Hons) Computing – G400 BSc (Hons) Computing with placement year – I100 BSc (Hons) Computer Games Design & Development – G451 BSc (Hons) Computer Games Design & Development with placement year – I620 BSc (Hons) Web Development – G452 BSc (Hons) Web Development with placement year – I150
10.	<b>Subject Benchmark statement and/or professional body statement</b>	<a href="#">QAA Subject Benchmark Statement: Computing (2016)</a>
11.	<b>Date of Programme Specification preparation/ revision</b>	Revised due to new Subject Benchmark and new award (MComp) - March 2016), updated December 2016. August 2017 – AQU and WBS amendments

## 12. Educational aims of the programme

This Programme Specification covers three interlinked degrees in Computing: BSc (Hons) Computing; BSc (Hons) Computer Games Design & Development; BSc (Hons) Web Development]. These awards aim to:

- Engage students in the study of the nature of computation, effective ways to exploit computation, and the practical limitations of computation in application terms.
- Prepare students for future employment and lifelong learning in a professional, technical, legal and ethical framework, with the ability to draw up goals, objectives and self-development plans
- Integrate theory and practice in order to obtain an appreciation of a range of applications and their impact on users
- Develop students generic skills, an ability to work under guidance and as a team member

- Provide opportunities for students to engage in work-based experiential learning as an integral part of the programme
- Enable students to produce small well-constructed programmes to solve well-specified problems
- Engage students in the understanding and application of essential concepts, principles and practices of the subject in the context of well-defined scenarios, showing judgement in the selection and application of tools and techniques
- Enable students to produce work involving problem identification, analysis, design, development and testing of a system with accompanying documentation, recognising the important relationships between these stages and showing problem solving and evaluation skills drawing on supporting evidence
- Enable students to become self-directed learners able to acquire new skills as necessary

*In addition, and more specifically:*

- **The BSc (Hons) Computing course also aims to:**
  - Provide opportunities to acquire/develop skills in modules on a wide range of topics spanning the entire area of computing
- **The BSc (Hons) Web Development course also aims to:**
  - Provide a focus on web and database development
- **The BSc (Hons) Computer Games Design & Development course also aims to:**
  - Provide a focus on programming, object-oriented design and development and game design and engineering

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

The learning outcomes for each award are listed below. These outcomes are set at the threshold level of each of these awards.

## **BSc (Hons) Computing**

### **Knowledge and understanding:**

*On successful completion of the course, students will be able to:*

1. Appreciate the concepts of Computing and their relevance to everyday life.
2. Demonstrate knowledge and understanding of theories, concepts, principles and facts relating to computing and computer applications.
3. Demonstrate knowledge of core disciplines of computing including: programming, games, web, and databases.
4. Comprehend 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.
5. Recognize key technology changes affecting the running of computer operations within organisations and how this could affect their future software implementations.

### **Cognitive and intellectual skills:**

*On successful completion of the course, students will be able to:*

1. Appreciate the role of evaluation and testing in ensuring that computer-based systems meet the criteria for their defined use and future developments.

2. Demonstrate understanding of methods, tools and approaches to specify, design, implement and evaluate computer systems.
3. Reflect on and communicate computing principles, orally, textually or using electronic media, including an assessment of the impact of new technologies.
4. Recognize the professional, economic, social, moral environmental, and ethical issues involved in the sustainable deployment of computing.
5. Exhibit problem solving skills in dealing with complex issues of systems development and design.

**Practical skills relevant to employment:**

*On successful completion of the course, students will be able to:*

1. Initiate and implement projects.
2. Show ability to operate, specify, design, construct, test, document and maintain reliable, secure and usable computer-based systems and applications.
3. Evaluate quality and trade-offs in systems.
4. Recognise risk, safety, legal or accessibility aspects associated with the deployment of various computer-based systems.
5. Understand practical requirements for computer-based systems including recognising, formulating and analysing criteria leading to specifications used to solve specific problems within constraints of requirements, timescale and budget.

**Transferable/key skills:**

*On successful completion of the course, students will be able to:*

1. Exhibit information-retrieval skills such as the use of browsers and search engines and evaluating sources of information.
2. Display numeracy and literacy in both understanding and presenting cases of both a qualitative and a quantitative nature.
3. Show ability to work as a member of a team, recognizing different roles within the team, and various ways of organizing teams.
4. Manage individual learning and development, including organization, time-management development and lifelong learning.
5. Demonstrate research skills such as planning research, gathering and analysis of primary data.
6. Understand future generators of sustainable values.

Learning outcomes can be achieved through the mandatory modules (COMP2311 and COMP3008) and various optional modules.

## **BSc (Hons) Web Development**

**Knowledge and understanding:**

*On successful completion of the course, students will be able to:*

1. Appreciate the concepts of web-based Computing and their relevance to everyday life.
2. Demonstrate knowledge and understanding of theories, concepts, principles and facts relating to web development and applications.
3. Demonstrate knowledge of core disciplines of web development including: programming and databases.
4. Comprehend the practical requirements for web-based systems including the recognition and analysis of criteria and models leading to specifications used in the solution of specific problems.
5. Recognize key technology changes affecting the running of web-based operations within organisations and how this could affect their future software implementations.

### **Cognitive and intellectual skills:**

*On successful completion of the course, students will be able to:*

1. Appreciate the role of evaluation and testing in ensuring that web-based systems meet the criteria for their defined use and future developments.
2. Demonstrate understanding of methods, tools and approaches to specify, design, implement and evaluate web-based systems.
3. Reflect on and communicate web principles, orally, textually or using electronic media, including an assessment of the impact of new technologies.
4. Recognize the professional, economic, social, moral environmental, and ethical issues involved in the sustainable deployment of web-based systems.
5. Exhibit problem solving skills in dealing with complex issues of systems development and design.

### **Practical skills relevant to employment:**

*On successful completion of the course, students will be able to:*

1. Initiate and implement projects.
2. Show ability to operate, specify, design, construct, test, document and maintain reliable, secure and usable web-based systems and applications.
3. Evaluate quality and trade-offs in systems.
4. Recognise risk, safety, legal or accessibility aspects associated with deployment of various web-based systems.
5. Understand practical requirements for web-based systems including recognising, formulating and analysing criteria leading to specifications used to solve specific problems within constraints of requirements, timescale and budget.

### **Transferable/key skills:**

*On successful completion of the course, students will be able to:*

1. Exhibit information-retrieval skills such as the use of browsers and search engines and evaluating sources of information.
2. Display numeracy and literacy in both understanding and presenting cases of both a qualitative and a quantitative nature.
3. Show ability to work as a member of a team, recognizing different roles within the team, and various ways of organizing teams.
4. Manage individual learning and development, including organization, time-management development and lifelong learning.
5. Demonstrate research skills such as planning research, gathering and analysis of primary data.
6. Understand future generators of sustainable values.

Learning outcomes can be achieved through the mandatory modules (COMP2311, COMP2341, COMP2381, COMP3003 and COMP3341) and various optional modules.

## **BSc (Hons) Games Design and Development**

### **Knowledge and understanding:**

*On successful completion of the course, students will be able to:*

1. Appreciate the concepts of game-based Computing and their relevance to everyday life.
2. Demonstrate knowledge and understanding of theories, concepts, principles and facts relating to games and games-based applications.
3. Demonstrate knowledge of core disciplines of games including: programming and game based engineering.

4. Comprehend the practical requirements for games-based systems including the recognition and analysis of criteria and models leading to specifications used in the solution of specific problems.
5. Recognize key technology changes affecting the running of games-based operations within organisations and how this could affect their future software implementations.

**Cognitive and intellectual skills:**

*On successful completion of the course, students will be able to:*

1. Appreciate the role of evaluation and testing in ensuring that games-based systems meet the criteria for their defined use and future developments.
2. Demonstrate understanding of methods, tools and approaches to specify, design, implement and evaluate games-based systems.
3. Reflect on and communicate games principles, orally, textually or using electronic media, including an assessment of the impact of new technologies.
4. Recognize the professional, economic, social, moral environmental, and ethical issues involved in the sustainable deployment of games.
5. Exhibit problem solving skills in dealing with complex issues of systems development and design.

**Practical skills relevant to employment:**

*On successful completion of the course, students will be able to:*

1. Initiate and implement projects.
2. Show ability to operate, specify, design, construct, test, document and maintain reliable, secure and usable games-based systems and applications.
3. Evaluate quality and trade-offs in systems.
4. Recognise risk, safety, legal or accessibility aspects associated with deployment of various games-based systems.
5. Understand practical requirements for games-based systems including recognising, formulating and analysing criteria leading to specifications used to solve specific problems within constraints of requirements, timescale and budget.

**Transferable/key skills:**

*On successful completion of the course, students will be able to:*

1. Exhibit information-retrieval skills such as the use of browsers and search engines and evaluating sources of information.
2. Display numeracy and literacy in both understanding and presenting cases of both a qualitative and a quantitative nature.
3. Show ability to work as a member of a team, recognizing different roles within the team, and various ways of organizing teams.
4. Manage individual learning and development, including organization, time-management development and lifelong learning.
5. Demonstrate research skills such as planning research, gathering and analysis of primary data.
6. Understand future generators of sustainable values.

Learning outcomes can be achieved through the mandatory modules (COMP2311, COMP2331, COMP2351, COMP3004 and COMP3351) and various optional modules.

**Learning, teaching and assessment methods for BSc (Hons)**

A varied approach is taken to learning, teaching and assessment which is designed to encourage students to progress as individuals within their capabilities to achieve a qualification and broaden their subject knowledge. The programme promotes active learning as well as preparing students for employability in various computing fields. Structured sessions utilise a variety of activities, including hands-on PC seminars, group discussion, case study analysis and

simulations. Face-to-face workshops are integrated as part of the learning process with tutor and peer led sessions. Online resources are available via the Virtual Learning Environment (VLE). Students are encouraged to engage in peer-support, through both informal contacts (email and direct), but also through the use of discussion groups (supported by the VLE). The skills of researching, evaluating, synthesising and citing sources of information are highlighted within the mandatory modules: COMP2311 and COMP3003/4/8 and secondary research is a part of most module assignments.

Tutor support is deployed at all levels to assist students' progression towards achieving a broad but deep understanding of the field of computing, to motivate students and to provide different learning approaches. The level of tutor input is appropriate to the needs of the subject matter and the learning outcomes of the module. Individual supervision is also given.

Assessment is by a variety of means including essays, reports, learning journals, oral presentations, artefacts, group work, research-driven tasks and open and closed-book tests. Modules typically include a strong element of formative assessment. This is achieved through in-session discussions and exercises together with online 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. Explicit attention is also given to the plagiarism issue for textual work and coding.

In relation to software, software is aligned with employability required by industry. The software chosen is used to promote active and hands-on learning in seminar sessions. This software is installed at City Campus and available for student use 24x7. When possible, we attempt to utilise software that the students can freely access and download to their home computers. However, due to the nature of vendor agreements, it is not always possible to provide 'free' software. Use of OpenSource software and 'free trials' in modules are used where appropriate.

#### **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. The programme's assessment strategy has been considered within the context of UW's [Learning and Teaching Strategy](#) and [Assessment Policy](#) (UW Grade descriptors). Assessment criteria and grade descriptors are provided for each assessment. Each pathway is differentiated by different learning, teaching and assessment methods. For example BSc (Hons) Games Design and Development focuses on a milestone approach, BSc (Hons) Web Development focuses on the creation of live software projects.

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 covered. Assessments for the individual modules have been designed to enable students to demonstrate that they successfully meet the learning outcomes. Each module specification 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 in assessments is placed on development of analytical skills and combining theory and practice. The style 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, project-based learning and assessment and work-based learning. The use of formative assessment is especially important and practical projects are incorporated in the programme. Other areas of emphasis include:

- a. Support for formative assessment through on-line exercises and assignment drafts.
- b. Facilitation of discussions and provision of a forum for on line tutor-to-student and peer-to-peer support.
- c. An approach of some module assignments, where the first assignment typically has a theoretical context, while the second may be grounded in practice.
- d. Development of learning skills and confidence through multiple learning assessment approaches where students have the opportunity to maximize and develop a range of skills.
- e. Offering enhanced challenges and opportunities to students with advanced topic skills
- f. Detailed assessment grading criteria and matrices which help to clarify goals and expected standards.
- g. An appropriate balance for scheduling summative assessments during the year. One approach in several modules is the use of multiple learning assessment opportunities where several portions of the assignment are phased during the assessment period. This allows students to balance their work-loads and receive feedback during each assessment opportunity.
- h. The inclusion of summative assessments in most modules where students have the opportunity to receive formal feedback on assignment drafts.

A grid showing assessment methods and weightings mapped to modules at each level is included in the course handbook. The assessment calendar of submission dates is posted in Blackboard on the WBS page.

The programme has also been designed to align with the [University's Curriculum Design Policy](#). It therefore "reflects the institution's values, goals and mission, that provide an excellent experience for students to learn, discover and fulfil their academic potential, and offer opportunities for students to be 'co-creators' in the learning experience, whilst also securing appropriate academic standards."

## **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 (Hons) Computing) and specialist routes in BSc (Hons) Web Development and BSc (Hons) Computer Games Design & Development. The modules (and their content) have been chosen to allow an efficient integration, to support the four 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 (Hons) 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 (Hons) Web Development and BSc (Hons) 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. For example BSc (Hons) Web Development students take mandatory modules in E-business at level 5 and Web Applications Development at levels 5 and 6.

### **15.2 BSc (Hons) Generic Computing 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, mobile technologies, and IT services.

This is available in full-time or part-time mode and may be taken as a Single, Major, Joint, Minor, or top-up pathway. Joint degrees options in Computing include:

- Animation
- Business Management
- Education Studies
- Environmental Management
- Graphic Design and Multimedia
- Mathematics

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 BSc (Hons) Computing Specialist Awards**

#### **BSc (Hons) 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, e-business development, e-marketing, web architecture, software development, mobile development and IT services. This is available as Single Honours only.

This may be taken in full-time, part-time mode or sandwich mode with an optional one year placement between levels 5 and 6.

#### **BSc (Hons) 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 transferable 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.

This 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<sup>1</sup> 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.

This is available as Single Honours only. It 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, 6 and 7 Award Maps, Course Handbook for excluded combinations and joint modules.



## 16. QAA and Professional Academic Standards and Quality

Academic standards for these courses have been set and are maintained in accordance with [Section A of the UK Quality Code for Higher Education](#).

The following Subject Benchmark Statement was used to develop the programme.

- [Bachelor's Degree with Honours in Computing 2016](#)

It articulates the knowledge, skills and categories of achievement to be expected of successful honours graduates in the field. It has 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 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.
- Meet Computing Curriculum recommendations and aims developed by three professional bodies (IEEE, BCS and ACM).

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 "[2013 National Occupational Standards for Games and Interactive Media](#)"<sup>1</sup> defined by the Sector Skill Council for Creative Media (SkillSet 2013), and based on the "[2008 IGDA Curriculum Framework](#)" defined by the International Game Developer Association Education Committee. It fulfils the learning outcomes, course, resources and teaching requirements and quality criteria specified for the following [Skillset 2013](#) modules: "Programming and mathematics for computer games"; "High Level Games Programming"; "Game Creation Process."

Computing, Games and Web are all aligned with industry standards as set out by the Association of Computing Machinery, the British Computing Society and the Institute of Electrical and Electronics Engineers.

The BSc (Hons) Computing, BSc (Hons) Web Development and BSc (Hons) Computer Games Design & Development are located at level 6 of the FHEQ.

## 17. Support for students

### 17.1 General Approaches to Support

Our fundamental approach to student support is centred on the need to motivate and inspire our students. 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 and preferences. 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.

### **17.2 Student Induction**

Our induction process for students in the BSc programmes consists of a week of activities designed to inform students what is expected of them in a Higher Education setting.

The following are activities that have been put in place for new students entering WBS. These activities provide a range of activities where students develop relationships with their peers and tutors, learn about university services and engage in team building activities.

- Meet Student Liaison and student course representatives (formerly known as StARS)
- Talks on Employability, placements, international study-abroad options
- Visit to HIVE
- Meet with module leaders, tutors and Academic Advisors
- Hands-on sessions on UoW computer systems, library, software
- Student Union activities
- Talks by Registry, Learning Services, librarians, student services

### **17.3 Personal Academic Tutoring**

Each student has a nominated Personal Academic Tutor to provide academic advice and guidance, personal development planning and pastoral support as appropriate. The Personal Academic Tutor plays a significant role in enhancing the student's academic and personal experience of studying and [key aspects of the role](#) include:

- Assisting students to make the transition to studying in higher education
- Helping students to understand the requirements of their course
- Supporting students to take responsibility for their own learning
- Helping students to make the most of learning resources and other forms of support available
- Supporting students in academic, professional and career related planning and development
- Advising and guiding students on issues or problems that arise while they are at University
- Supporting students for whom there may be particular challenges
- Meeting students on a regularly scheduled basis. Individual meeting will be held throughout the academic year, and the Personal Academic Tutor will provide group meeting times during Worcester and/or Induction Weeks
- Advising students on individual course options, module selection and academic planning and progression.

### **17.4 Student Support**

The following activities, documents, services and facilities 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
- 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 Learning Services staff through an Information Desk and Study Guides
- Student representation on the Course Management Committee to address course-wide issues
- A nominated Personal Academic 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
- A specialist exchange tutor to advise students regarding module choices and other arrangements through the University's [International Office](#) for an exchange semester overseas.
- 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.
- Module selection guidance to identify progression opportunities within BSc (Hons) Computing programmes.

### **17.5 Future Weeks**

The fundamental objective of Future (Worcester) Weeks is to provide students with an enriched learning experience to complement the opportunities provided elsewhere in the curriculum by providing the space to develop cross-course activities such as employability/careers fairs, student conferences, project working, visits and speakers and skills sessions.

The following are activities that have been put in place for Future Weeks (previously Employability and Achievement Weeks).

- Presentation skills
- Searching for vacancies
- CV clinic
- Graduate Internships
- Bright Futures Employers Panel & Networking
- Mock assessment centre
- Careers in Computing
- Options for life after graduation
- Self-employment – starting your own business
- Volunteering opportunities
- Computing Portfolios
- Investor pitches workshops

## 18. Admissions

### Admissions policy

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 students.

### Entry requirements

The normal minimum entry requirement for undergraduate degree courses is the possession of 4 GCSEs (Grade C/4 or above) and a minimum of 2 A Levels (or equivalent Level 3 qualifications).

The current UCAS Tariff requirements for entry to this course are published in the prospectus and on the UW website <https://www.worc.ac.uk/journey/a-z-of-courses.html>

See [Admissions Policy](#) for other acceptable qualifications.

Students whose first language is not English will be expected to have reached a sufficient standard on admission to the programme (e.g. IELTS of 6.0 or higher or Pearson 59 of 51 or higher in each component). Please note that IELTS exams must be no more than two years old at the start of the course. Further details regarding minimum entry requirements can be found from the University [web site](#).

International students must hold a qualification equivalent to the UK standard entry requirements for undergraduate courses. International students can check their qualification with the International Recruitment Team at: [international@worc.ac.uk](mailto:international@worc.ac.uk)

### Recognition of Prior Learning

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 recognition 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).

Further information on Recognition of Prior Learning can be found at <http://www.worcester.ac.uk/registryservices/941.htm>

### Admissions procedures

Applications will be considered by the Computing Admissions Tutor, following which a firm offer (as appropriate) will be made directly to the student. Students will then need to send email confirmation to the University of Worcester of formal acceptance of this offer.

The University also encourages applicants to attend visit days but they are not compulsory.

Full-time applicants apply through UCAS (please refer to Section 9 of this Programme Specification for relevant course codes)

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

## **Admissions/selection criteria**

Each application will be considered by the Computing Admissions Tutor and evidence of qualification will be checked. Offers will be conditional against successful meeting of entry requirements. Evidence from personal statements and/or references included with the application form will be considered in order to ascertain a candidate's ability to demonstrate enthusiasm for the subject, commitment to study and the academic capability to succeed on the Course.

### **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 and evaluation
- Annual Course feedback through the University's Online Student Survey and the National Student Survey
- Annual Course Evaluation Report completed by Course Leader
- Periodic Review (every six years) including external scrutiny
- Student Academic Course Representatives (formerly known as StARs)
- External Examiners' Reports
- Links with employers
- Peer teaching observation
- Staff research and scholarly activity and membership of professional organisations

### **20. Regulation of assessment**

#### **The course operates under the University's Taught Courses Regulatory Framework**

##### **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.
- 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.
- For full details of submission regulations see [Taught Courses Regulatory Framework](#).

##### **Retrieval of failure**

- Students are entitled to resit failed assessment items for any module that is awarded a fail grade.
- Reassessment items that are passed are capped 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 during an academic year or at one level 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, including mandatory modules for the award title
DipHE	Passed a minimum of 240 credits with at least 90 credits at Level 5 or higher, including mandatory modules for the award title
Degree (non-honours)	Passed a minimum of 300 credits with at least 90 credits at Level 5 or higher and a minimum of 60 credits at Level 6, including the mandatory modules for Level 5 and Level 6 of the award (not the Independent Study module) as specified on the award map.
Degree with honours	Passed a minimum of 360 credits with at least 90 credits at Level 5 or higher and a minimum of 120 credits at Level 6, as set out in the award map

## Classification

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

### For BA/BSc (Hons) awards:

Classification determined on the profile of the best grades from 60 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.

or

Classification determined on the profile of the best grades from 120 credits attained at Level 6 only.

## 21. Indicators of quality and standards

- 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 current Computing curriculum. They have applauded our innovative approaches to course structure and module content.
- Successful completion of a Computing Revalidation in May 2011 to significantly enhance the programme quality and offerings and a successful Computing Periodic Review in December 2014.
- Positive feedback and satisfaction from students in module evaluations, with an average of 89% positive satisfaction rate.

- Many members of Worcester Business School staff engaged in developing the programme are actively engaged in relevant research, consultancy and professional practice in the disciplines of Computing.
- The Computing National Student Survey scores for 2014/15 showed: Overall satisfaction was 4.2 (out of 5.0), teaching (4.1), assessment & feedback, (3.9), academic support (4.0), organisational and management (4.0), learning resources (4.5), personal development (4.3).

## 22. Graduate destinations, employability and links with employers

### Graduate destinations

Graduate employment has continued to increase from 77.8% (2013-14) to 85.2% (2014-15) showing more students are gaining employment in the field year-on-year. Unemployment decreased to 11% (2014-15) in contrast to 21.9% (2013-14) but those involved in research/training decreased to 3% (2014-15) from 9.7% (2013-14).

These figures show that the market for computing graduates is improving and more students are gaining employment in the area of study. Most of the Computing graduates work in Wholesale/Retail and Manufacturing industries.

Each of the awards has been designed to provide students with future career routes.

For example:

- *BSc (Hons) Computing Graduates* might be of especial value, either in emerging areas where specialist courses may not be established or in contexts where their ability to span the field would be useful.
- *BSc (Hons) Computer Games Design & Development Graduates* will typically tend to seek opportunities in the games industry, such as games designer, scripter, content programmer, games tester, general programmer, quality assessor and within the wider interactive media industries, such as designer, developer, production assistant, content strategist and programmer.
- *BSc (Hons) Web Development Graduates* will typically tend to seek opportunities in roles such as web designer, web developer, systems analyst, e-business development consultant, web architect, software developer and mobile apps developer.

### Student employability

- Short-term work placement and job opportunities are advertised in WBS's VLE site for existing students.
- Employability events and activities are available to students each academic year (Future (Worcester) Weeks – see Section 17)
- 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.
- 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."

([http://www.worc.ac.uk/edu/documents/Student\\_Employability\\_supporting\\_statement\\_for\\_LTA\\_strategy\\_final\\_4\\_2\\_11.pdf](http://www.worc.ac.uk/edu/documents/Student_Employability_supporting_statement_for_LTA_strategy_final_4_2_11.pdf))

- All full-time Single Honours students have the opportunity to take a sandwich degree with a UK or international based **placement year**, normally in the third year of the programme. Students can apply for opportunities at a large number of well-known organisations across a wide range of industry sectors who offer placements annually, including IBM, Microsoft, Resource Group, Bosch, Hewlett Packard and many local organisations.
- Students at Level 6 may choose to take a **Consultancy Project module** worth 30 credits which aims to develop employability and key skills.
- Short-term work placement and job opportunities are also advertised via the School's intranet for existing students. Students have worked on short-term web development projects for local firms such as Artwork Creative and Peppercorn.
- Career guidance is available through University of Worcester Career Advisory Service and periodic Career Fairs are organised by Student Services.
- Students have the opportunity to work at the University as a vacation research assistantship. This provides undergraduates and recent graduates with 'hands on' experience of working on a research project over the summer vacation, enabling them to gain insight into a research career, as well as enhancing their CV.
- Students have the option to work on a Student as Academic Partners projects as paid employment. This enables students to work in equal partnership with academic staff to strengthen the student learning experience at the University for the benefit of all.

### Links with employers

- Worcester Business School aims to promote closer links with employers through the work of its Business and Professional Development Team. The team is currently working with key decision makers in a variety of private, public and third sector organisations, and is supported by the School's Employers' Advisory Group, which meets on a regular basis.
- **Media Lab.** Worcester Business School's 'Media Lab' is a dedicated purposefully-equipped space to provide students with the experience of working on 'live' projects with clients from the local business community. Projects include: mobile applications, games, website and software development. The Lab is also working as a test bed for learning and teaching and sustainability methodologies. Current clients include:
  - Hereford and Worcester Fire & Rescue Service
  - Community Catalysts
  - University of Worcester
  - West Mercia Police and Crime Commissioner's Office
  - The Association for Dementia Studies
- Computing Showcase – employers attend the 'Computing Project' Showcase event each spring where third-year students present their projects to industry experts, employers, tutors and other students.
- The School works closely with professional organisations including the British Computing Society.
- The School has worked with a number of business clients in developing and delivering its programmes. These include – Borwell, OGL Computer, Allpay Ltd, Worcester Bosch, Tiger Computing, Telecetera Ltd Software Solutions, Titania.
- The School has well-developed working relations with the local business community many of whom contribute to Computing programmes to give a real-world insight into the future world of work.
- These professional and business networks also involve external events, many of which are open to students, as well as employers.

**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 associated course documentation e.g. course handbooks, module outlines and module specifications.

## APPENDIX: AWARD MAPS

<b>Course Title: BSc (Hons) Computing</b>
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Level 4								
Module Code	Module Title	Credits (Number)	Status (Mandatory (M) or Optional (O))				Pre-requisites (Code in brackets indicates earlier modules, which would be accepted as alternative pre-requisites)	Exclusions (Code in brackets indicates earlier modules which would also be excluded)
			SH	Maj	JH	Min		
COMP1321	Digital Infrastructures	30	O	O	-	O	None	None
COMP1331	Introduction to Game Design & Development	30	O	O	-	O	None	(COMP1251)
COMP1341	Introduction to Web & Database Development	30	M	M	M	O	None	(COMP1241 and COMP1212)
COMP1342	Creative Computing	30	O	O	-	O	None	(COMP1242 and COMP1243)
COMP1347	Programming: Concepts to Construction	30	O	O	O	O	None	(COMP1231 and COMP1345 and COMP1812)
COMP1381	Introduction to Information Systems	30	O	O	-	O	None	None
COMP1812	Programming and Scripting	30	O	O	O	O	None	(COMP1347 and COMP1345 and COMP1231)
GAMA1000	Game Art: Design, Theory and Concepts	30	O	O	-	-	None	None
GAMA1001	Game Art: Planning and Production	30	O	O	-	-	None	None
LANG	Optional modules offered by the Language Centre	30	O				None	

### Single Honours Requirements at Level 4

Single Honours students must take 120 credits in total drawn from the table above to include mandatory module COMP1341, **PLUS** a choice of either COMP1347 or COMP1812 and optional modules - which can include up to 30 credits drawn from a range of Language Centre modules in: Academic English for native and non-native speakers of English; Modern Foreign Languages; and Teaching English as a Foreign Language (TEFL). Details of the available Language Centre modules can be found on the Language Centre website: <http://www.worcester.ac.uk/your-home/language-centre-module-options.html>.

### Joint Honours Requirements at Level 4

Joint Honours students must take 60 credits from the table above to include COMP1341 and a choice of either COMP1347 or COMP1812.

Level 5									
Module Code	Module Title	Credits (Number)	Status (Mandatory (M) or Optional (O))				Pre-requisites (Code in brackets indicates earlier modules, which would be accepted as alternative pre-requisites)	Co-requisites	Exclusions (Code in brackets indicates earlier modules which would also be excluded)
			SH	Maj	JH	Min			
COMP2303	Computer Science: Embedded Systems	15	O	O	O	O	None	None	None
COMP2311	Systems Analysis & Design	30	M	M	M	O	None	None	(COMP2211 and COMP2213)
COMP2311E1	Systems Analysis & Design	15	-	-	-	-	None	None	(COMP2211 and COMP2213)
			Mandatory for exchange students						
COMP2322	Networks in Organisations	15	O	O	O	O	None	None	COMP2221
COMP2331	Object Oriented Design & Development	30	O	O	O	O	COMP1347 or COMP1812 (or COMP1345 or COMP1231)		(COMP2231 and COMP3231)
COMP2341	Web Applications Development	30	O	O	O	O	COMP1341 (or COMP1241)		(COMP2241 and COMP2242)
COMP2341E1	Web Applications Development	15	-	-	-	-	COMP1341 (or COMP1241)		(COMP2241 and COMP2242)
			Optional for exchange students						
COMP2351	Game Design & Engineering	30	O	O	O	O	COMP1331 and either COMP1347 or COMP1812 (Or COMP1345 or COMP1231 (as a substitute for COMP1347 or COMP1812) and COMP1251 (as a substitute for COMP1331))	COMP2331	(COMP2251 and COMP2253)
COMP2361	Mobile Applications Development	30	O	O	O	O	COMP1341 or COMP1812 or COMP1347 (or COMP1345 or COMP1241 or COMP1231)		COMP3361
COMP2361E1	Mobile Applications Development	15	-	-	-	-	COMP1341 or COMP1812 or COMP1347 (or COMP1345 or COMP1241 or COMP1231)		COMP3361
			Optional for exchange students						
COMP2371	Introduction to Information Systems	30	O	O	O	O	None		COMP1381

COMP2381	E-business	30	O	O	O	O	None		COMP3381 (and COMP3242 and COMP3271)
COMP2381E1	E-business	15	-	-	-	-	None		COMP3381 (and COMP3242 and COMP3271)
			Optional for exchange students						
BUSM2070	Work Based Investigation	30	O	O	O	O	None	None	BUSM2069
BUSM2089	Preparing for Placement	15	O	O	O	O	None	None	UMSC2010, UMSC3010
BUSM2388	Social Media	15	O	O	O	O	None	None	None
GAMA2001	Game Production and UX Design	30	O	O	-	-	GAMA1001 Game Design and Production Or COMP1341 and (COMP1812 or COMP1347)	None	None
GAMA2005	Game Art Environments	15	O	O	-	-	ANIM1005 or GAMA1001	None	None
LANG	Optional modules offered by the Language Centre	15/30	O				None		

### Single Honours Requirements at Level 5

Single Honours students must take 120 credits in total drawn from the table above to include mandatory module COMP2311 and optional modules - which can include up to 30 credits drawn from a range of Language Centre modules in: Academic English for native and non-native speakers of English; Modern Foreign Languages; and Teaching English as a Foreign Language (TEFL). Details of the available Language Centre modules can be found on the Language Centre website: <http://www.worcester.ac.uk/your-home/language-centre-module-options.html>.

### Joint, Major and Minor Honours Requirements at Level 5

Students following Joint Honours pathways can adjust their studies at level 5 to take more modules in one subject or can maintain an equally balanced programme of modules in each subject. The precise award title (Joint Hons or Major/Minor Hons) depends on the total number of credit achieved in each subject at levels 5 and 6 – for further information see SOLE.

### Major Pathway Requirements at Level 5

Major Pathway students must take at least 60 and no more than 90 credits from the table above to include COMP2311.

### Joint Pathway Requirements at Level 5

Joint Pathway students must take 60 credits from the table above to include COMP2311.

### Minor Pathway Requirements at Level 5

Minor Pathway students must take at least 30 credits and no more than 60 credits from the table above.

Level 6								
Module Code	Module Title	Credits (Number)	Status (Mandatory (M) or Optional (O))				Pre-requisites  (Code in brackets indicates earlier modules, which would be accepted as alternative pre-requisites)	Exclusions  (Code in brackets indicates earlier modules which would also be excluded)
			SH	Maj	JH	Min		
COMP3008	Computing Project	30	M	M	O	-	None	(COMP3003 and COMP3004 and COMP3005 and COMP3006 and COMP3007 and JOIN3001/2)
COMP3302	Nature of Computing	15	O	O	O	O	None	(COMP3202)
COMP3303	Elements of Computer Science	15	O	O	O	O	None	(COMP3104)
COMP3304	Advanced Object Oriented Programming	15	O	O	O	O	COMP2331	None
COMP3305	Applied Drone Technology	15	O	O	O	O	None	None
COMP3341	Advanced Web Applications Development	30	O	O	O	O	COMP1341 or BUSM1814 (or COMP1241)	(COMP3243)
COMP3351	Advanced Game Design & Engineering	30	O	O	O	O	COMP2351 (or COMP2253)	(COMP3251 and COMP3253)
COMP3352	Modelling and Simulation	15	O	O	O	O	COMP1345 or COMP1812 or COMP1347	(COMP2252 and COMP3252)
COMP3357	Managing Cyber Risks	15	O	O	O	O	None	None
COMP3361	Mobile Application Development	30	O	O	O	O	COMP1341 or COMP1812 or COMP1347 (or COMP1345 or COMP1241 or COMP1231)	COMP2361
COMP3371	CyberSecurity	15	O	O	O	O	COMP1812 or COMP1347 (or COMP1345 or COMP1231)	(COMP3221)
COMP3381	E-business	30	O	O	O	O	None	COMP2381 (and COMP3242 and COMP3271)
COMP3391	Practical Database Applications	15	O	O	O	O	COMP1341 or BUSM1814 (or COMP1212)	COMP2212
JOIN3001/2	Independent Study	30	-	-	O	-	None	(COMP3001 and COMP3002 and COMP3003 and COMP3004 and COMP3005 and COMP3006 and COMP3007 and COMP3008 and JOIN3003)
BUSM3069	Consultancy Project	30	O	O	O	O	None	None
<b>Work Placement Option</b>								

BUSM3000	Work Placement	NA	O	O	O	O	Prep workshop	None
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**Single Honours Requirements at Level 6**

Single Honours students must take 120 credits from the table above to include COMP3008.

**Joint, Major and Minor Honours Requirements at Level 6**

Students following pathways in two subjects can adjust their studies at level 6 to take more modules in one subject or can maintain an equally balanced programme of modules in each subject. The precise award title (Joint Hons or Major/Minor Hons) depends on the total number of credit achieved in each subject at levels 5 and 6 – for further information see SOLE

**Major Pathway Requirements at Level 6**

Major Pathway students must take either 75 or 90 credits from the table above to include COMP3008.

**Joint Pathway Requirements at Level 6**

Joint Pathway students must take either 60 or 75 credits from the table above.

**Minor Pathway Requirements at Level 6**

Minor pathway students must take either 30 or 45 credits from the table above.

Course Title: Web Development					
Level 4					
Module Code	Module Title	Credits (Number)	Status (Mandatory (M) or Optional (O) or (D) Designated)	Pre-requisites (Code in brackets indicates earlier modules, which would be accepted as alternative pre-requisites)	Exclusions (Code in brackets indicates earlier modules which would also be excluded)
COMP1321	Digital Infrastructures	30	O	None	None
COMP1331	Introduction to Game Design & Development	30	O	None	(COMP1251)
COMP1341	Introduction to Web & Database Development	30	M	None	(COMP1241 and COMP1212)
COMP1342	Creative Computing	30	O	None	(COMP1242 and COMP1243)
COMP1347	Programming: Concepts to Construction	30	O	None	(COMP1345 and COMP1231 and COMP1812)
COMP1381	Introduction to Information Systems	30	O	None	None
COMP1812	Programming and Scripting	30	O	None	(COMP1345 and COMP1347 and COMP1231)
GAMA1000	Game Art: Design, Theory and Concepts	30	O	None	None
GAMA1001	Game Art: Planning and Production	30	O	None	None
LANG	Optional modules offered by the Language Centre	30	O	None	

#### Single Honours Requirements at Level 4

Single Honours students must take 120 credits in total drawn from the table above to include mandatory module COMP1341, **PLUS** a choice of either COMP1347 or COMP1812 and optional modules - which can include up to 30 credits drawn from a range of Language Centre modules in: Academic English for native and non-native speakers of English; Modern Foreign Languages; and Teaching English as a Foreign Language (TEFL). Details of the available Language Centre modules can be found on the Language Centre website: <http://www.worcester.ac.uk/your-home/language-centre-module-options.html>.

Level 5						
Module Code	Module Title	Credits (Number)	Status (Mandatory (M) or Optional (O))	Pre-requisites (Code in brackets indicates earlier modules, which would be accepted as alternative pre-requisites)	Co-requisites	Exclusions (Code in brackets indicates earlier modules which would also be excluded)
COMP2303	Computer Science: Embedded Systems	15	O	None	None	None
COMP2311	Systems Analysis & Design	30	M	None		(COMP2211 and COMP2213)
COMP2311E1	Systems Analysis & Design	15	(Mandatory for exchange students)	None		(COMP2211 and COMP2213)
COMP2322	Networks in Organisations	15	O	None	None	COMP2221
COMP2331	Object Oriented Design & Development	30	O	COMP1347 or COMP1812 (or COMP1345 or COMP1231)		(COMP2231 and COMP3231)
COMP2331E1	Object Oriented Design & Development	15	Optional for exchange students	COMP1347 or COMP1812 (or COMP1345 or COMP1231)		(COMP2231 and COMP3231)
COMP2341	Web Applications Development	30	M	COMP1341 (or COMP1241)		(COMP2241 and COMP2242)
COMP2341E1	Web Applications Development	15	Mandatory for exchange students	COMP1341 (or COMP1241)		(COMP2241 and COMP2242)
COMP2351	Game Design & Engineering	30	O	COMP1331 and either COMP1347 or COMP1812 (Or COMP1345 or COMP1231 (as a substitute for COMP1347 or COMP1812) and COMP1251 (as a substitute for COMP1331))	COMP2331	(COMP2251 and COMP2253)
COMP2361	Mobile Applications Development	30	O	COMP1341 or COMP1812 or COMP1347 (or COMP1345 or COMP1241 or COMP1231)		COMP3361



COMP2361E1	Mobile Applications Development	15	Optional for exchange students	COMP1341 or COMP1812 or COMP1347 (or COMP1345 or COMP1241 or COMP1231)		COMP3361
COMP2371	Introduction to Information Systems	30	O	None		COMP1381
COMP2381	E-business	30	M	None		COMP3381 (and COMP3242 and COMP3271)
COMP2381E1	E-business	15	Mandatory for exchange students	None		COMP3381 (and COMP3242 and COMP3271)
BUSM2070	Work Based Investigation	30	O	None	None	BUSM2069
BUSM2089	Preparing for Placement	15	O	None	None	UMSC2010, UMSC3010
BUSM2388	Social Media	15	O	None	None	None
GAMA2001	Game Production and UX Design	30	O	GAMA1001 Game Design and Production Or COMP1341 and (COMP1812 or COMP1347)	None	None
GAMA2005	Game Art Environments	15	O	ANIM1005 or GAMA1001	None	None
LANG	Optional modules offered by the Language Centre	15/30	O	None		

### Single Honours Requirements at Level 5

Single Honours students must take 120 credits in total drawn from the table above to include all mandatory modules COMP2311, COMP2341 and COMP2381 and optional modules - which can include up to 30 credits drawn from a range of Language Centre modules in: Academic English for native and non-native speakers of English; Modern Foreign Languages; and Teaching English as a Foreign Language (TEFL). Details of the available Language Centre modules can be found on the Language Centre website: <http://www.worcester.ac.uk/your-home/language-centre-module-options.html>.

<b>Level 6</b>					
<b>Module Code</b>	<b>Module Title</b>	<b>Credits (Number)</b>	<b>Status (Mandatory (M) or Optional (O))</b>	<b>Pre-requisites (Code in brackets indicates earlier modules, which would be accepted as alternative pre-requisites)</b>	<b>Exclusions (Code in brackets indicates earlier modules which would also be excluded)</b>
COMP3003	Web Development Project	30	M	None	(COMP3004 and COMP3005 and COMP3006 and COMP3007 and COMP3008 )
COMP3302	Nature of Computing	15	O	None	(COMP3202)
COMP3303	Elements of Computer Science	15	O	None	(COMP3104)
COMP3304	Advanced Object Oriented Programming	15	O	COMP2331	None
COMP3305	Applied Drone Technology	15	O	None	None
COMP3341	Advanced Web Applications Development	30	M	COMP1341 or BUSM1814 (or COMP1241)	(COMP3243)
COMP3351	Advanced Game Design & Engineering	30	O	COMP2351 (or COMP2253)	(COMP3251 and COMP3253)
COMP3352	Modelling and Simulation	15	O	COMP1345 or COMP1812 or COMP1347	(COMP2252 and COMP3252)
COMP3357	Managing Cyber Risks	15	O	None	None
COMP3361	Mobile Application Development	30	O	COMP1341 or COMP1812 or COMP1347 (or COMP1345 or COMP1241 or COMP1231)	COMP2361
COMP3371	CyberSecurity	15	O	COMP1812 or COMP1347 (or COMP1345 or COMP1231)	(COMP3221)
COMP3391	Practical Database Applications	15	O	COMP1341 or BUSM1814 (or COMP1212)	COMP2212
BUSM3069	Consultancy Project	30	O	None	None
<b>Work Placement Option</b>					
BUSM3000	Work Placement	NA	O	Prep Workshops	None

### Single Honours Requirements at Level 6

Single Honours students must take 120 credits from the table above to include COMP3341 and COMP3003.

**Course Title: Computer Games Design & Development**

Level 4					
Module Code	Module Title	Credits (Number)	Status (Mandatory (M) or Optional (O) or (D) Designated)	Pre-requisites (Code in brackets indicates earlier modules, which would be accepted as alternative pre-requisites)	Exclusions (Code in brackets indicates earlier modules which would also be excluded)
COMP1321	Digital Infrastructures	30	O	None	None
COMP1331	Introduction to Game Design & Development	30	D	None	(COMP1251)
COMP1341	Introduction to Web & Database Development	30	M	None	(COMP1241 and COMP1212)
COMP1342	Creative Computing	30	O	None	(COMP1242 and COMP1243)
COMP1347	Programming: Concepts to Construction	30	M	None	(COMP1231 and COMP1345 and COMP1812)
COMP1381	Introduction to Information Systems	30	O	None	None
LANG	Optional modules offered by the Language Centre	30	O	None	

**Single Honours Requirements at Level 4**

Single Honours students must take 120 credits in total drawn from the table above to include all mandatory modules COMP1331, COMP1341 and COMP1347 and optional modules - which can include up to 30 credits drawn from a range of Language Centre modules in: Academic English for native and non-native speakers of English; Modern Foreign Languages; and Teaching English as a Foreign Language (TEFL). Details of the available Language Centre modules can be found on the Language Centre website: <http://www.worcester.ac.uk/your-home/language-centre-module-options.html>.

**Designated module:** a module at Level 4 specified as acceptable for meeting the requirements of the award that a student must take. A designated module is determined by the course or subject within which it is validated.

Level 5						
Module Code	Module Title	Credits (Number)	Status (Mandatory (M) or Optional (O))	Pre-requisites (Code in brackets indicates earlier modules, which would be accepted as alternative pre-requisites)	Co-requisites	Exclusions (Code in brackets indicates earlier modules which would also be excluded)
COMP2303	Computer Science: Embedded Systems	15	O	None	None	None
COMP2311	Systems Analysis & Design	30	M	None		(COMP2211 and COMP2213)
COMP2322	Networks in Organisations	15	O	None	None	COMP2221
COMP2331	Object Oriented Design & Development	30	M	COMP1347 or COMP1812 (or COMP1345 or COMP1231)		(COMP2231 and COMP3231)
COMP2341	Web Applications Development	30	O	COMP1341 (or COMP1241)		(COMP2241 and COMP2242)
COMP2351	Game Design & Engineering	30	M	COMP1331 and either COMP1347 or COMP1812 (Or COMP1345 or COMP1231 (as a substitute for COMP1347 or COMP1812) and COMP1251 (as a substitute for COMP1331))	COMP2331	(COMP2251 and COMP2253)
COMP2361	Mobile Applications Development	30	O	COMP1341 or COMP1812 or COMP1347 (or COMP1345 or COMP1241 or COMP1231)		COMP3361
COMP2371	Introduction to Information Systems	30	O	None		COMP1381
COMP2381	E-business	30	O	None		COMP3381 (and COMP3242 and COMP3271)
BUSM2070	Work Based Investigation	30	O	None	None	BUSM2069
BUSM2089	Preparing for Placement	15	O	None	None	UMSC2010, UMSC3010
BUSM2388	Social Media	15	O	None	None	None
GAMA2001	Game Production and UX Design	30	O	GAMA1001 Game Design and Production Or COMP1341 and (COMP1812 or COMP1347)	None	None
GAMA2005	Game Art Environments	15	O	ANIM1005 or GAMA1001	None	None

LANG	Optional modules offered by the Language Centre	15/30	O	None		
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### Single Honours Requirements at Level 5

Single Honours students must take 120 credits in total drawn from the table above to include all mandatory modules COMP2311, COMP2331 and COMP2351 and optional modules - which can include up to 30 credits drawn from a range of Language Centre modules in: Academic English for native and non-native speakers of English; Modern Foreign Languages; and Teaching English as a Foreign Language (TEFL). Details of the available Language Centre modules can be found on the Language Centre website: <http://www.worcester.ac.uk/your-home/language-centre-module-options.html>.

Level 6					
Module Code	Module Title	Credits (Number)	Status (Mandatory (M) or Optional (O))	Pre-requisites (Code in brackets indicates earlier modules, which would be accepted as alternative pre-requisites)	Exclusions (Code in brackets indicates earlier modules which would also be excluded)
COMP3004	Games Development Project	30	M	None	(COMP3003 and COMP3005 and COMP3006 and COMP3007 and COMP3008 )
COMP3302	Nature of Computing	15	O	None	(COMP3202)
COMP3303	Elements of Computer Science	15	O	None	(COMP3104)
COMP3304	Advanced Object Oriented Programming	15	O	COMP2331	None
COMP3305	Applied Drone Technology	15	O	None	None
COMP3341	Advanced Web Applications Development	30	O	COMP1341 or BUSM1814 (or COMP1241)	(COMP3243)
COMP3351	Advanced Game Design & Engineering	30	M	COMP2351 (or COMP2253)	(COMP3251 and COMP3253)
COMP3352	Modelling and Simulation	15	O	COMP1345 or COMP1812 or COMP1347	(COMP2252 and COMP3252)
COMP3357	Managing Cyber Risks	15	O	None	None
COMP3361	Mobile Application Development	30	O	COMP1341 or COMP1812 or COMP1347 (or COMP1345 or COMP1241 or COMP1231)	COMP2361

COMP3371	CyberSecurity	15	O	COMP1812 or COMP1347 (or COMP1345 or COMP1231)	(COMP3221)
COMP3381	E-business	30	O	None	COMP2381 (and COMP3242 and COMP3271)
COMP3391	Practical Database Applications	15	O	COMP1341 or BUSM1814 (or COMP1212)	COMP2212
BUSM3069	Consultancy Project	30	O	None	None
<b>Work Placement Option</b>					
BUSM3000	Work Placement	NA	O	Prep Workshops	None

### Single Honours Requirements at Level 6

Single Honours students must take 120 credits from the table above to include: COMP3351 and COMP3004.