

Course Specification

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Produced By:	Laura Clode
Status:	Validated

Core Information

Awarding Body / Institution:	University of Wolverhampton		
School / Institute:	School of Mathematics and Computer Science		
Course Code(s):	CS021K23UV	Sandwich	4 Years
UCAS Code:	I104		
Course Title:	BSc (Hons) Computing and Information Technology with Sandwich Placement		
Hierarchy of Awards:	Bachelor of Science with Honours Computing and Information Technology, having satisfactorily completed a sandwich placement Bachelor of Science with Honours Computing and Information Technology Bachelor of Science Computing and Information Technology, having satisfactorily completed a sandwich placement Bachelor of Science Computing and Information Technology, having satisfactorily completed a sandwich placement Diploma of Higher Education Applied Computing Certificate of Higher Education Applied Computing University Statement of Credit University Statement of Credit		
Language of Study:	English		
Date of DAG approval:	26/Sep/2016		
Last Review:	2015/6		
Course Specification valid from:	2015/6		
Course Specification valid to:	2021/2		

Academic Staff

Course Leader:	Dr Vinita Nahar
Head of Department:	Dr Kevan Buckley

Course Information

Location of Delivery:	University of Wolverhampton
Category of Partnership:	Not delivered in partnership
Teaching Institution:	University of Wolverhampton
Open / Closed Course:	This course is open to all suitably qualified candidates.

Entry Requirements:

Entry requirements are subject to regular review. The entry requirements applicable to a particular academic year will be published on the University website (and externally as appropriate e.g. UCAS)

2017 Entry

- A Level minimum of BB or CDD.
- BTEC National Diploma grade MMP, BTEC National Certificate grade DM
- BTEC QCF Extended Diploma grade MMP, BTEC QCF Diploma grade DM
- Access to HE Diploma full award (Pass of 60 credits - of which a minimum of 45 credits must be at level 3 including 18 at Merit or Distinction).
- Applicants will normally be expected to hold GCSE English and Maths at grade C+/4 or equivalent
- If you've got other qualifications or relevant experience, please contact [The Gateway](#) for further advice before applying.
- International entry requirements and application guidance can be found [here](#)
- Successful completion of the [International Foundation Year in Science and Engineering](#) guarantees entry on to this course

Distinctive Features of the Course:

Computing and Information Technology degree provides graduates with an excellent foundation in the key areas of modern computing whilst also offering the facility to follow more specialised routes. First year topics include logic, problem solving, server management, data manipulation, web development and software design as well as some team based projects. Year two studies extend the experience of web development and introduce networking, and databases as well as optional modules in smart systems, embedded technology, human-computer interaction and image processing. By the end of the year, students will have good working knowledge in the core principles of computing ready for an optional sandwich placement year. In the final year students further their knowledge of networks and cutting edge database technologies, as well as studying mobile application development and option modules in a variety of subjects including the Internet of things and cloud computing. The final year project will offer the opportunity to apply the knowledge gained over the course to a practical problem.

A placement can be undertaken anywhere; local, national or even, in some instances, international. During a placement, you will be doing similar work to a normal employee of the organisation giving you a unique insight into your chosen profession or sector, the opportunity to acquire crucial personal skills and also the opportunity to build a network of useful contacts. Many companies that employ graduates use placement programmes as a method of recruitment so you could be fast tracked into employment or onto one of their graduate schemes if you impress them.

The team at [The Workplace](#) constantly search for new placement opportunities but if you find an opportunity that interests you or you have been successful in securing one yourself, contact them for further information and support.

Educational Aims of the Course:

Computing and Information Technology degree provides graduates with an excellent foundation in the key

areas of modern computing whilst also offering the facility to follow more specialised routes.

First year topics include logic, problem solving, server management, data manipulation, web development and software design as well as some team based projects. Year two studies extend the experience of web development and introduce networking, and databases as well as optional modules in smart systems, embedded technology, human-computer interaction and image processing. By the end of the year, students will have good working knowledge in the core principles of computing ready for an optional sandwich placement year. In the final year students further their knowledge of networks and cutting edge database technologies, as well as studying mobile application development and option modules in a variety of subjects including the Internet of things and cloud computing. The final year project will offer the opportunity to apply the knowledge gained over the course to a practical problem.

Intakes:

September

Major Source of Funding:

Office for Students (OFS)

Tuition Fees:

Tuition fees are reviewed on an annual basis. The fees applicable to a particular academic year will be published on the University website.

Year	Status	Mode	Amount
2020/1	H	Full Time / Sandwich	£9250.00
2020/1	Overseas	Full Time / Sandwich	£12250.00

PSRB:

None

Course Structure:

September (Sandwich)

Year 1

Module	Title	Credits	Period	Type
4CS001	Introductory Programming And Problem Solving	20	SEM1	Core
4CS015	Fundamentals of Computing	20	SEM1	Core
4CI018	Academic Skills and Team-based Learning	20	SEM1	Core
4CS017	Internet Software Architecture	20	SEM2	Core
4CS012	Server Management and Virtualisation	20	SEM2	Core
4CS016	Embedded Systems Programming	20	SEM2	Core

September (Sandwich)

Year 2

Module	Title	Credits	Period	Type
5CS023	Web Development	20	SEM1	Core
5CI022	Databases	20	SEM1	Core
5CS032	Computer Networking	20	SEM1	Core
5CI023	Advanced Databases	20	SEM2	Core
5CS024	Collaborative Development	20	SEM2	Core

For this option group you must choose a minimum of 20 credits and a maximum of 20 credits

5CS020	Human - Computer Interaction	20	SEM2	
5CS031	Network Security	20	SEM2	
5CS038	Enterprise Network Systems	20	SEM2	

September (Sandwich)

Year 3

Module	Title	Credits	Period	Type
5MM006	Industrial Placement	40	CRYRA	Core

September (Sandwich)

Year 4

Module	Title	Credits	Period	Type
6CS007	Project and Professionalism	40	YEAR	Core
6CS026	Systems Architecture and Internet of Things	20	SEM1	Core
6CS028	Advanced Web Development	20	SEM2	Core

For this option group you must choose a minimum of 20 credits and a maximum of 20 credits

6CS013	Emerging Interactive Technologies	20	SEM1
6CS014	Complex Systems	20	SEM1

For this option group you must choose a minimum of 20 credits and a maximum of 20 credits

6CS029	Advanced Networks	20	SEM2
6CS030	Big Data	20	SEM2

Please note: Optional modules might not run every year, the course team will decide on an annual basis which options will be running, based on student demand and academic factors, to create the best learning experience.

Learning, Teaching and Assessment

Academic Regulations Exemption:

None

Reference Points:

The course is designed with reference to the most up-to-date QAA Subject Benchmark for Computing and the accreditation requirements of BCS The Chartered Institute for IT. In addition reference has also been made to;

1. Quality Code - [Part A: Setting and Maintaining Academic Standards](#). Including :
2. [Qualifications Frameworks](#)[Characteristics Statements](#)
3. [Credit Frameworks](#)
4. [Subject Benchmark Statements- Computing](#)
5. Quality Code - [Part B: Assuring and Enhancing Academic Quality](#)
6. [University Policies and Regulations](#)
7. Equality Act (2010).

Learning Outcomes:

CertHE Course Learning Outcome 1 (CHECLO1)

"Apply appropriate theory, tools and techniques (e.g. theory and practice of programming, object-oriented design and analysis, design and construction of data systems, concurrent and distributed systems) to the

analysis, design and synthesis of solutions to requirements in the domain of Computing and Information Technology."

CertHE Course Learning Outcome 2 (CHECLO2)

"Demonstrate mastery of the essential facts, concepts, principles, theories and practices enabling graduate employment in applications of Computing and Information Technology (e.g. Software development, media computing, systems analysis)."

CertHE Course Learning Outcome 3 (CHECLO3)

"Demonstrate a range of transferable skills in: problem solving; communication; project management; working individually and in teams; self-management; and the ability to gather, evaluate and reflect on information from relevant sources and synthesize new knowledge and solutions to requirements in the domain of applications of Computing and Information Technology."

CertHE Course Learning Outcome 4 (CHECLO4)

"Demonstrate a range of social, legal, ethical and professional skills required for continuing professional development in Computing and Information Technology disciplines within a world-wide context."

DipHE Course Learning Outcome 1 (DHECLO1)

"Apply appropriate theory, tools and techniques (e.g. theory and practice of programming, object-oriented design and analysis, design and construction of data systems, concurrent and distributed systems) to the analysis, design and synthesis of solutions to requirements in the domain of Computing and Information Technology."

DipHE Course Learning Outcome 2 (DHECLO2)

"Demonstrate mastery of the essential facts, concepts, principles, theories and practices enabling graduate employment in applications of Computing and Information Technology (e.g. Software development, media computing, systems analysis)."

DipHE Course Learning Outcome 3 (DHECLO3)

"Demonstrate a range of transferable skills in: problem solving; communication; project management; working individually and in teams; self-management; and the ability to gather, evaluate and reflect on information from relevant sources and synthesize new knowledge and solutions to requirements in the domain of applications of Computing and Information Technology."

DipHE Course Learning Outcome 4 (DHECLO4)

"Demonstrate a range of social, legal, ethical and professional skills required for continuing professional development in Computing and IT disciplines within a world-wide context."

Ordinary Degree Course Learning Outcome 1 (ORDCLO1)

"Apply appropriate theory, tools and techniques (e.g. theory and practice of programming, object-oriented design and analysis, design and construction of data systems, concurrent and distributed systems) to the analysis, design and synthesis of solutions to requirements in the domain of Computing and Information Technology."

Ordinary Degree Course Learning Outcome 2 (ORDCLO2)

"Demonstrate mastery of the essential facts, concepts, principles, theories and practices enabling graduate

employment in applications of Computing and Information Technology (e.g. Software development, media computing, systems analysis)."

Ordinary Degree Course Learning Outcome 3 (ORDCLO3)

"Demonstrate a range of transferable skills in: problem solving; communication; project management; working individually and in teams; self-management; and the ability to gather, evaluate and reflect on information from relevant sources and synthesize new knowledge and solutions to requirements in the domain of applications of Computing and Information Technology."

Ordinary Degree Course Learning Outcome 4 (ORDCLO4)

"Demonstrate a range of social, legal, ethical and professional skills required for continuing professional development in Computing and IT disciplines within a world-wide context."

Honours Degree Course Learning Outcome 1 (DEGCLO1)

"Apply appropriate theory, tools and techniques (e.g. theory and practice of programming, object-oriented design and analysis, design and construction of data systems, concurrent and distributed systems) to the analysis, design and synthesis of solutions to requirements in the domain of Computing and Information Technology."

Honours Degree Course Learning Outcome 2 (DEGCLO2)

"Demonstrate mastery of the essential facts, concepts, principles, theories and practices enabling graduate employment in applications of Computing and Information Technology (e.g. Software development, media computing, systems analysis)."

Honours Degree Course Learning Outcome 3 (DEGCLO3)

"Demonstrate a range of transferable skills in: problem solving; communication; project management; working individually and in teams; self-management; and the ability to gather, evaluate and reflect on information from relevant sources and synthesize new knowledge and solutions to requirements in the domain of applications of Computing and Information Technology."

Honours Degree Course Learning Outcome 4 (DEGCLO4)

"Demonstrate a range of social, legal, ethical and professional skills required for continuing professional development in Computing and IT disciplines within a world-wide context."

Overview of Assessment:

Module	Title	Course Learning Outcomes
4CI018	Academic Skills and Team-based Learning	CHECLO1, CHECLO2, CHECLO3, CHECLO4
4CS001	Introductory Programming And Problem Solving	CHECLO1, CHECLO2, CHECLO3
4CS012	Server Management and Virtualisation	CHECLO1, CHECLO2, CHECLO3
4CS015	Fundamentals of Computing	CHECLO1, CHECLO2, CHECLO3
4CS016	Embedded Systems Programming	CHECLO1, CHECLO2, CHECLO3
4CS017	Internet Software Architecture	CHECLO1, CHECLO2, CHECLO3, CHECLO4
5CI022	Databases	DHECLO1, DHECLO2, DHECLO3
5CI023	Advanced Databases	DHECLO1, DHECLO2, DHECLO3
5CS020	Human - Computer Interaction	DHECLO1, DHECLO2, DHECLO3
5CS023	Web Development	DHECLO1, DHECLO2, DHECLO3
5CS024	Collaborative Development	DHECLO1, DHECLO2, DHECLO3, DHECLO4
5CS031	Network Security	DHECLO1, DHECLO2, DHECLO3
5CS032	Computer Networking	DHECLO1, DHECLO2, DHECLO3
5CS038	Enterprise Network Systems	DHECLO1, DHECLO2
5MM006	Industrial Placement	DHECLO1, DHECLO2, DHECLO3, DHECLO4
6CS007	Project and Professionalism	DEGCLO1, DEGCLO2, DEGCLO3, DEGCLO4, ORDCLO1, ORDCLO2, ORDCLO3, ORDCLO4
6CS013	Emerging Interactive Technologies	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2, ORDCLO3
6CS014	Complex Systems	DEGCLO1, DEGCLO2, ORDCLO1, ORDCLO2
6CS026	Systems Architecture and Internet of Things	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2, ORDCLO3
6CS028	Advanced Web Development	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2, ORDCLO3
6CS029	Advanced Networks	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2, ORDCLO3
6CS030	Big Data	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2, ORDCLO3

Teaching, Learning and Assessment:

The learning activities on your course will develop distinctive graduate attributes that will make you stand out and enhance your employability. These skills will be embedded into the curriculum throughout your course. Examples include;

Digitally Literacy: All Mathematics graduates will surely be users of advanced technologies. However, on your course you will develop your skills to encompass literacy more fully such as learning how to find information and how to take best advantage of digital resources and the Internet to make you effective in the Information Age.

Global Citizenship: On each level of your course you will learn about the social aspects of Mathematics, which will broaden your understanding of the way the world works and how communication and collaboration are evolving.

Knowledgeable and Enterprising: Throughout your course you will build up your professional and employability skills and learn to apply the knowledge you have acquired in an enterprising way. You will constantly nurture your own intellectual curiosity. The tools, methodologies and techniques that you will

learn have been carefully selected to prepare you with the skills that employers demand and the opportunities for work based learning and placements will allow you to gain the vital experience that they often expect.

Formative assessments provide feedback and are not used in the grading process. Their purpose is to provide both tutors and students with a gauge of progress. Summative assessments are used in the grading process. Most summative assessments (with a notable exception of exams) also have a formative aspect to them in that tutors provide written feedback on the work.

Students should use this feedback to improve their performance on future assessments. Feedback on an assessment on one module may help with assessments on other modules. Assessment methods are closely linked to the learning and teaching approaches used.

Below are examples of the assessment methods that you may encounter;

Assignments – task based and report based assignments. Coursework frequently requires the writing of reports documenting the development of solutions. It is frequent practice to ask students to reflect on their learning experience as part of the coursework.

Case studies – based on realistic scenarios. Analysis, application and evaluation skills are developed via case studies as appropriate for the topic areas.

Practical exercises – tutorials and workshop sessions. These aid understanding and application of knowledge using a variety of IT tools within practical settings in workshops as well as assessing depth and breadth of understanding and application of subject knowledge. Practical exercises are the primary mechanisms for assessing analysis and evaluation. The tasks undertaken involve well-defined problems with varied level of complexity. Some practical exercise may involve interactive learning tools that are able to provide formative feedback.

Portfolios / e-portfolios – contain samples of work demonstrating what the student has accomplished. This is a good way to assess learning and development which is illustrated by multiple examples of work, opportunities for self-assessment and reflection charting over a period of time. Tasks set relate to outcomes being assessed thus documenting evidence of development towards mastering the identified outcomes and skills. Enhances the assessment process by demonstrating a range of skills and understandings of the subject area by the student. Some portfolios are sometimes called Learning Journals.

Formal presentations - you may be required to present your work to a group of tutors or to the rest of the class. This may be a demonstration of practical work or something you developed or built or may present the results of a study. These are an important way of assessing your communication skills.

Examinations and Time-Constrained Assessments (tests) - may follow a traditional format or on-line alternatives. They are used to ensure breadth of knowledge has been acquired. TCA and examinations, some of which are case study based, emphasise application of knowledge and skills.

Group Project Work - where group work is assessed, mechanisms are used to allow individual contributions to be reflected in the grading as appropriate e.g. peer assessment of individual group members, individual reflection on the process and the product.

Peer-group assessment – using student feedback, particularly in group assessments to identify each student's contribution to the work.

Individual Project Work - All courses require at least one module of individual project work where students work individually on a large task. This type of work is supported by either regular meetings with a named project supervisor or through seminars.

Work-based assessments – used to assess the student's work-based modules and enable feedback from work placement organisations. These are usually used for students who are industry-based and doing their course part-time or students doing a placement.

Assessments will also focus on skills such as team working, time-management and developing Continuing Professional Development (CPD) awareness, as well as discipline-specific skills related to the analysis, design, development, implementation, testing and evaluation of systems. Typical tasks include: production of technical documentation, reports for differing target audiences, presentations, demonstrations and viva,

allowing assessment of the breadth and depth of knowledge, analysis and synthesis, communication, and evaluation within the subject area.

Assessment Methods:

At the University of Wolverhampton, a variety of modes of assessment will be used to support and test your learning and progress and to help you develop capabilities that are valued beyond your University studies and into your working life. Your course may include a variety of assessment activities:

Written examinations (including online examinations, open and closed book examinations and quizzes)
Coursework (for example, essays, reports, portfolios, project proposals and briefs, CVs, poster presentation)
Practical (for example, oral and video presentations, laboratory work, performances, practical skills assessment)

In the final year of your undergraduate degree, and at the end of your postgraduate degree, you are likely to be expected to write an extended piece of work or research, such as a dissertation or a practice-based piece of research.

Student Support:

University provided support:

As well as providing general counselling support the University Counselling Service provides short courses on topics such as "Self Confidence", "Stress Management and Relaxation" and "Life Skills". They also provide study skills and academic support, providing short courses such as provide help in areas such as "Writing and Assignment Skills", "Exam Techniques", "Enhancing Professional Skills", "Personal Development Planning" and "Making Choices for the Future.

University Learning Centres provide general academic skills support to all students. You can make an appointment with a study skills advisor for advice on areas such as academic writing, assignment planning, exam preparation, and time management. In addition, there is a regular timetable of drop-in and bookable workshops covering information and digital literacy skills, including academic referencing. School of Computing and IT students are supported by a designated subject librarian who is available to support research and project work.

Course support:

At the start of each year of your course you will be assigned a Personal Tutor who will guide you through the induction process and provide support and academic counselling throughout the year on an appointment basis. They should be able to offer you advice and guidance to help you liaise with other staff and support facilities in the School and University. You should meet your Personal Tutor at least 3 times a year, which must include meetings that you are invited to at critical points in your course. The Academic Programme Advisor (APA) provides academic counselling and will be accessible throughout the week on a drop-in or appointment basis to discuss timetables, requests for extensions, requests for extenuating circumstances, general concerns about study and student life and general programme planning. The APA will act as a first point of contact in relation to leave of absence (including returning after leave), withdrawal, transferring to another course (internal and external) and changes to mode of attendance. Your Course Leader will be available thereafter for meetings by appointment to discuss leave of absence, withdrawal, transferring to another course (internal and external), changes to mode of attendance, returning after leave of absence and direct entrants.

Subject support:

Tutorials, workshops, seminars and meetings - provide the primary opportunities for

students to interact with staff on topics relating to modules. All modules provide at least one of these forms of face-to-face support.

Formative feedback - tutors provide personalised written feedback on most summative assessments. The mechanism for feedback from purely formative tasks varies between assessments, but will always be provided in some form. Online formative tasks often provide feedback straight away. On occasions tutors may provide generalised verbal feedback to the whole class on points relating to an assessment

Assessment and subject-based surgeries provide additional student support for subjects that students often need extra help with. They are often concentrated around the times when assessments take place. Revision sessions are provided for many modules that have exam-like tests and enable you to interact with tutors to review parts of the course. Mock exams and tests may provide opportunities to experience an examination environment before the final summative test and give you feedback on your understanding.

Employability in the Curriculum:

You will engage with a range of learning activities which will include lectures, tutorials, workshops and on-line forums and in class discussions. The learning activities on your course will develop distinctive graduate attributes that will make you stand out and enhance your employability. These skills will be embedded into the curriculum throughout your course.

The completion of a Sandwich Year will enable you to gain valuable hands on experience in a relevant work environment. This will not only provide additional practical subject skills but it will also develop personal transferable skills such as communication skills, problem solving skills and demonstrate competency in working with other people. This will increase your employability and assist you in gaining employment in the future.

