

Course Specification

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Core Information

Awarding Body / Institution:	University of Wolverhampton		
School / Institute:	School of Mathematics and Computer Science		
Course Code(s):	SE072H01UV	University of Wolverhampton	Full-time 3 Years
UCAS Code:			
Hierarchy of Awards:	Bachelor of Science with Honours Computer Science with Secondary Education (QTS) Bachelor of Science with Honours Computer Science with Secondary Education (QTS) Bachelor of Science with Honours Computer Science with Secondary Education (QTS) Bachelor of Science Computer Science with Secondary Education (QTS) Bachelor of Science Computer Science with Secondary Education Diploma of Higher Education Computer Science Certificate of Higher Education Computer Science University Statement of Credit University Statement of Credit		
Language of Study:	English		
Date of DAG approval:	11/Aug/2017		
Last Review:	2015/6		
Course Specification valid from:	2014/5		
Course Specification valid to:	2021/2		

Academic Staff

Course Leader:	Mr Jeffrey Ting
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

- GCSE English and Mathematics at grade C or above or equivalent AND
- Minimum 280 UCAS points from three full A-levels

Qualifications considered to be the equivalent of the above will be considered by the university. If you've got other qualifications or relevant experience, please check out the UCAS tariff conversion table via the UCAS website: www.ucas.com.

International student language requirements and application guidance can be found at www.wlv.ac.uk/international/apply

Other requirements: An offer of a place will not be made until you have attended a formal interview and undertaken written subject-knowledge audits (Mathematics and English). All applicants must meet the DfE requirements for Initial Teacher Training.

All applicants will be required to undergo a Disclosure Barring Service (DBS) check.

Distinctive Features of the Course:

This course is designed for those who want to proceed in teaching and the QTS aspects of the course has three interrelated elements with critical reflection at the core;

- Professional studies
- Subject specialist studies
- School based teaching practice

Subject specialist studies are concerned with the knowledge, understanding and teaching of a particular subject. They focus on the key principles and key components of Computer Science subject knowledge, the ability to apply principles and knowledge in the classroom, and the assessment of pupils' achievements.

Professional studies are concerned with teachers' professional values, roles, responsibilities and development, together with whole school issues in education. Professional studies are taught through Subject studies as well as some whole cohort lectures, mixed group seminars, two days in schools working in mixed subject groups and a Primary school placement.

School based teaching experience involves developing competency in classroom teaching to the standards described in national legislation.

You will be taught by a professional team of lecturers who have significant research and industrial experience. Many of our staff are Fellows and Members of the Computer Science Industry's professional body the British Computer Society. Staff delivering the Education aspects of the course are all qualified teachers with a wealth of experience in secondary education.

You will learn about how cutting edge technology works and how to take advantage of it. You will get hands-on experience with latest developments like programming multicore processors, GPUs and the embedded microprocessor systems that enable mobile computing.

Educational Aims of the Course:

The BSc (Hons) Computer Science with Secondary Education (QTS) course aims to provide a thorough grounding in the core principles of Computer Science and integrate these with computer languages, tools, techniques and methodologies used by computer professionals worldwide. It offers you the flexibility to pursue areas of particular interest such as web, databases, and networking. Additionally, we will prepare you with the key skills needed to keep abreast of future developments.

The course will provide a high standard of both Computer Science subject content and pedagogical knowledge in addition to preparing students to take up a Computer Science teaching post in the secondary sector. The course reflects the specific and precise quality frameworks established by the relevant national government agency, and complies fully with the relevant teaching standards framework.

The BSc (Hons) Computer Science with Secondary Education (QTS) course is specifically designed to ensure that those who are successful can be recommended to the relevant professional body for the award of Qualified Teacher Status (QTS) which is the recognised professional award required by all those who wish to teach in a maintained school.

The course will also be designed to develop secondary school teachers who will be:

- empathetic and committed to pupils' learning;
- reflective and reflexive;
- enthusiastic and innovative;
- open-minded and research-aware
- capable of engaging in practitioner research
- flexible and creative
- knowledgeable – both in Computer Science and pedagogically

The course will also help a student to develop as a teacher who understands the link between subject knowledge and the curriculum knowledge needed to teach his/her their subject. Equally we seek to develop teachers who understand the needs of the individual pupil and the school community in which they will work.

Intakes:

September

Major Source of Funding:

Department for Education

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
2021/2	H	Full Time / Sandwich	£9250.00
2021/2	Overseas	Full Time / Sandwich	£12950.00
2022/3	H	Full Time / Sandwich	£9250.00
2022/3	Overseas	Full Time / Sandwich	£13450.00

PSRB:

None

Course Structure:

September (Full-time)

Full time and Sandwich Undergraduate Honours students normally study 120 credits per academic year; 60 credits semester 1 and 60 credits semester 2.

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
4CS001	Introductory Programming And Problem Solving	20	SEM1	Core
4CS015	Fundamentals of Computing	20	SEM1	Core
4CS020	Introduction to Games Technology for Serious Applications	20	SEM2	Core
4CS017	Internet Software Architecture	20	SEM1	Core
4CS021	Introduction to Object-Oriented Programming	20	SEM2	Core
4SE001	Subject-specific Pedagogy: Justifying the Specialist Subject	20	SEM2	Core

September (Full-time)

Full time and Sandwich Undergraduate Honours students normally study 120 credits per academic year; 60 credits semester 1 and 60 credits semester 2.

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
5CS019	Object-Oriented Design and Programming	20	SEM1	Core
5CS024	Collaborative Development	20	SEM2	Core
5SE001	Subject-specific Pedagogy: Teaching the Specialist Subject	20	SEM2	Core
5SE002	Professional Development: The Beginning Teacher	20	SEM2	Core

Group 01 | Min Value: 20 | Max Value: 20

5CI022	Databases	20	SEM1
5CS023	Web Development	20	SEM1

Group 01 | Min Value: 0 | Max Value: 20

For this option group you must choose a minimum of 20 credits and a maximum of 20 credit.
If you are a transfer student and did not study 4SE001 in Year 1 then you MUST select 5SE003. Select 5CS021 only if you are not taking 5SE003.

5SE003	Subject Specific Pedagogy 1a: Exploring the Teaching of the Specialist Subject	20	SEM1
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Linked Option Group Rule: Select a minimum of 20 credits and a maximum of 20 credits from the linked (*) groups.

***Group 01 | Min Value: 0 | Max Value: 20**

For this option group you must choose a minimum of 20 credits and a maximum of 20 credit.
If you are a transfer student and did not study 4SE001 in Year 1 then you MUST select 5SE003. Select 5CS021 only if you are not taking 5SE003.

5CS021	Numerical Methods and Concurrency	20	SEM1
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September (Full-time)

Full time and Sandwich Undergraduate Honours students normally study 120 credits per academic year; 60 credits semester 1 and 60 credits semester 2.

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
6CS007	Project and Professionalism	40	YEAR	Core
6SE007	Professional Development: The Developing Teacher	40	YEAR	Core
6SE008	Subject-specific Pedagogy: Investigating Practice	20	SEM2	Core

Group 01 | Min Value: 20 | Max Value: 20

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

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:

Section 1.2.3 - Exemption for delivery outside the standard University Academic Calendar in order to enable students to complete the required hours for two placement modules;

5SE002 Professional Development: The Beginning Teacher.

6SE007 Professional Development: The Developing Teacher.

Section 1.3.3 - Exemption to exclude the use of non-subject option modules at Level 4, Level 5 and Level 6 in order to meet QTS requirements and to facilitate the opportunity for students to gain Professional Body membership upon graduation.

Section 4.3.3 - Exemption in accordance with the Professional Body requirements for Qualified Teacher Status (QTS). There will be no automatic right to a second attempt for any failed practice components at the discretion of the Assessment Board (second attempts are permitted for theory components);

5SE002 Professional Development: The Beginning Teacher.

6SE007 Professional Development: The Developing Teacher.

Section 4.4.3 - Exemption in accordance with the Professional Body requirements for Qualified Teacher Status (QTS). Compensation will not be permitted for any core modules which are required in order to meet these standards;

4SE001 Subject-specific Pedagogy: Justifying the Specialist Subject

5SE001 Subject-specific Pedagogy: Teaching the Specialist Subject

5SE002 Professional Development: The Beginning Teacher

6SE007 Professional Development: The Developing Teacher

6SE008 Subject-specific Pedagogy: Investigating Practice.

APPROVED by AFRSC on 25th September 2015.

Reference Points:

Quality Code - [Part A: Setting and Maintaining Academic Standards](#). Including;

[Qualifications Frameworks](#)

[Characteristics Statements](#)

[Credit Frameworks](#)

[Subject Benchmark Statements](#)

Quality Code - [Part B: Assuring and Enhancing Academic Quality](#)

[University Policies and Regulations](#)

Equality Act (2010).

Initial Teacher Training Criteria and Supporting Advice (DfE, June 2020) [Initial Teacher Training Criteria and Supporting Advice](#)

The recommendation of Qualified Teacher Status (QTS) is subject to meeting the Teachers' Standards. These standards set the minimum requirements for teachers' practice and conduct.

Teachers' Standards (DfE, 2011) [Teachers' Standards](#)

Initial Teacher Training Courses are subject to inspection by the Office for Standards in Education (OFSTED).

Ofsted Handbook (Ofsted, June 2020) [Ofsted Initial Teacher Education Inspection Handbook](#)

Overview of Assessment:

Learning Outcomes	Modules
CERTHE1 Demonstrate knowledge of the underlying concepts and principles associated with your area(s) of study, and an ability to evaluate and interpret these within the context of that area of study.	
CERTHE2 Demonstrate an ability to present, evaluate and interpret qualitative and quantitative data, in order to develop lines of argument and make sound judgements in accordance with basic theories and concepts of your subject(s) of study.	
CERTHE3 Evaluate the appropriateness of different approaches to solving problems related to your area(s) of study and/or work.	
CERTHE4 Communicate the results of your study/work accurately and reliably, and with structured and coherent arguments.	
CERTHE5 Demonstrate the qualities and transferable skills necessary for employment requiring the exercise of some personal responsibility.	
DIPHE1 Demonstrate knowledge and critical understanding of the well-established principles of your area(s) of study, and of the way in which those principles have developed with an understanding of the limits of your knowledge, and how this	

influences analyses and interpretations based on that knowledge.

Learning Outcomes

Modules

DIPHE2 Demonstrate the ability to apply underlying concepts and principles outside the context in which they were first studied, including, where appropriate, the application of those principles in an employment context.

DIPHE3 Demonstrate knowledge of the main methods of enquiry in the subject(s) relevant to the named award, and ability to evaluate critically the appropriateness of different approaches to solving problems in the field of study.

DIPHE4 Use a range of established techniques to initiate and undertake critical analysis of information, and to propose solutions to problems arising from that analysis.

DIPHE5 Effectively communicate information, arguments and analysis in a variety of forms to specialist and non-specialist audiences, and deploy key techniques of the discipline effectively.

DIPHE6 Demonstrate the qualities and transferable skills necessary for employment, requiring the exercise of personal responsibility and decision-making and undertake further training, developing existing skills and acquire new competences that will enable them to assume significant responsibility within organisations.

BHONSN1 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 Computer Science.

BHONSN2 Demonstrate mastery of the essential facts, concepts, principles, theories and practices enabling graduate employment in applications of Computer Science (e.g. Software development, media computing, systems analysis).

BHONSN3 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 Computer Science and the dissemination of knowledge within the subject.

BHONSN4 Demonstrate a range of social, legal, ethical and professional skills required for continuing professional development in the Computer Science Discipline within a world-wide context and be able to disseminate this to a wider audience.

BHONS1 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 Computer Science.

BHONS2 Demonstrate mastery of the essential facts, concepts, principles, theories and practices enabling graduate employment in applications of Computer Science (e.g. Software development, media computing, systems analysis).

BHONS3 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 Computer Science and the dissemination of knowledge within the subject.

BHONS4 Demonstrate a range of social, legal, ethical and professional skills required for continuing professional development in the Computer Science Discipline within a world-wide context and be able to disseminate this to a wider audience.

BHONS5 Display the technical pedagogical and Computer Science competence to meet the standards required to be recommended for QTS and to teach Computer Science in secondary schools.

BHONS6 Act independently, exercise initiative and act as a positive role model in a range of complex teaching and learning situations.

Modules

Teaching, Learning and Assessment:

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. Examples include first equipping you with theory and knowledge of software engineering and then coupling it with practical application of current techniques. The final year of the course includes tasks similar to those faced by many software engineers in their first job, covering maintenance and extension of legacy systems, reverse engineering, automated regression testing and the application of refactoring and design patterns. The course also aims to make you aware of emerging techniques and technologies. In addition to the development of Learning Outcomes pertaining to Computer Science, students will develop competency in teaching skills. During each of the three years of the course you will be required to complete credit bearing learning in a secondary school. Learning activities to support the learning outcomes will include;

- Reflective Journal Entries
- University Professional Studies Sessions
- University Specialist Subject Sessions
- Audit and action planning
- Construction of personal timeline of education
- Review of progress towards standards to Qualified Teacher Status
- Experience in school, including:
 - Professional studies placement
 - Primary School placement
 - Two major teaching placements
 - School-based activities and tasks
- Personalised opportunities for enhanced professional development
- Compiling teaching files
- Record of Professional Development
- Subject Specific Research Project
- Career Entry and Development Portfolio.

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:

1. acquire, generate, interrogate and apply knowledge from a wide range of sources: The emphasis on the students moving to a student centred learning approach simultaneously fosters the development of transferrable skills, together with group learning and problem solving approaches.

2. develop research skills to enable analysis, synthesis, understanding and evaluation of data and information: This course will foster a sense of enquiry into the subject through problem solving examples. Students will develop skills to encompass digital 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.
3. demonstrate self-discipline and organizational skills by meeting deadlines, and taking responsibility for your own development and learning: throughout the course students will be required to develop as independent learners. They will be required to demonstrate transferable skills including time management.
4. present ideas clearly in an informed and persuasive manner to a variety of audiences: Students will be required to develop good communication skills. They will be required to demonstrate scientific writing skills. They will also need to show that they can communicate their subject information within a classroom setting
5. be innovative, creative and enterprising work collaboratively, whilst acknowledging, respecting and engaging with the views of others in a constructive and empathetic manner: The degree provides opportunities for students to undertake this formally in practical classes and workshop problem solving activities.
6. draw on professional advice and feedback to reflect on and improve your own learning and professional practice: Students are encouraged to reflect upon their learning experience and to extrapolate from this the skills that would make them stand out in their respective career pathways.
7. prepare for the world of work through engagement with real life situations, briefs and problems: The tools, methodologies and techniques that students learn have been carefully selected to prepare them with the skills that employers demand and the opportunities for work based learning and placements will allow them to gain the vital experience that are expected for qualified teacher status. Students will build up professional and employability skills and learn to apply the knowledge they have acquired in an enterprising way. You will constantly nurture your own intellectual curiosity. The tools, methodologies and techniques that students will learn have been carefully selected to prepare them with the skills that employers demand and the opportunities for work based learning and placements will allow them to gain the vital experience that is expected as a secondary school teacher in Computer Science.

engage with new ideas and ways of working as an active member of the communities in which you study, live and work: On each level of your course you will learn about social, legal and ethical aspects of Computing, which will broaden your understanding of the way the world works and how communication and collaboration are evolving.

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:

Students are supported in many ways.

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.

The following can be booked:

Harvard Referencing

Referencing with RefWorks

Get Ahead With Information Searching

Finding Journal Articles

Introduction to Academic Writing

Good Academic Practice and writing: paraphrasing, referencing and TurnItIn

Introduction to Critical Thinking

Improving your Presentation Skills

Preparing for your Exam

Report Writing

Planning your Dissertation

Reading and Note-making

In addition, there are drop in support facilities for students to seek help from the Learning Centre Staff. These cover assessment related topics such as:

exam revision

planning and writing your academic assignments

how to use your time efficiently and organise your academic study

how to take effective notes during lectures

tips on delivering effective presentations.

There is also a Mathematics Support Centre within the Learning Centre which offers drop in appointments for students who require additional help with mathematics and statistics. Faculty of Science and Engineering students are supported by a designated subject librarian who is available to support research and project work.

Course support:

Each student will be allocated a personal tutor who can provide general help, advice, guidance and, if required, direct them to services such as Student Office, Counselling Services, Student Enabling Centre, Student's Union, Chaplaincy (all Faiths), Study Skills (Learning centre).

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 Faculty 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. Your personal tutor 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 personal tutor 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:

Module-specific support is provided through the module team via face-to-face and electronic tutorials, scheduled drop-in sessions or SAMS (Student Appointment Management System) appointments.

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.

Feedback from formative and some summative assessments is designed to support learning by assisting the student in identifying and improving areas of weakness, and further developing areas of strength. 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.

The Faculty of Science and Engineering also offers a Student Support Team (located in the Faculty Administration Office) and this is a key additional source of support, particularly for non-academic related matters. This tends to be a student's first port of call and the team can advise students and, if required direct them to further University services as mentioned above.

Employability in the Curriculum:

With the award of BSc (Hons) Computer Science with Secondary Education (QTS) you will be well-placed to pursue a career in Computer Science teaching in secondary schools.

Alternatively, a Computer Science degree is an internationally respected qualification which can lead you into careers such as:

Software Developer

Programmer

Software Tester

Database Administrator

Software Engineer

Graduates may also have the opportunity to proceed to a masters course or research degree in Computer Science or Education.

