

School of Engineering and Computer Science

Title of Programme: Modular BSc Honours Computer Science (online)

Programme Code: CMWCSIT

Programme Specification

This programme specification is relevant to students entering:
21 September 2020

Associate Dean of School (Academic Quality Assurance):
Susan Murray



Signature

A programme specification is a collection of key information about a programme of study (or course). It identifies the aims and learning outcomes of the programme, lists the modules that make up each stage (or year) of the programme, and the teaching, learning and assessment methods used by teaching staff. It also describes the structure of the programme, its progression requirements and any programme-specific regulations. This information is therefore useful to potential students to help them choose the right programme of study, to current students on the programme, and to staff teaching and administering the programme.

Summary of amendments to the programme:

Section	Amendment
1.D	The sentence of "Data Mining and Visualisation is only offered in Semester A" is removed.
1.D	The restrictions applied to Academic Support Partners are removed.

If you have any queries regarding the changes please email AQO@herts.ac.uk

Programme Specification

Modular BSc Honours in Computer Science (online)

This programme specification (PS) is designed for prospective students, enrolled students, academic staff and potential employers. It provides a concise summary of the main features of the programme and the intended learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the teaching, learning and assessment methods, learning outcomes and content for each module can be found in Definitive Module Documents (DMDs) and Module Guides.

Section 1

Awarding Institution/Body	University of Hertfordshire
Teaching Institution	University of Hertfordshire
University/partner campuses	Online/Supported Distance Learning
Programme accredited by	
Final Qualification	BSc Honours
All Final Award titles	BSc Honours in Computer Science
(Qualification and Subject)	BSc Honours in Information Technology
FHEQ level of award	6
UCAS code(s)	None
Language of Delivery	English

A. Programme Rationale

The Modular BSc Honours in Computer Science (online) is a well-established and popular degree programme. This programme is designed to mirror the operation of the campus-based modular BSc Honours Computer Science. At Levels 4 and 5 the programme is offered in part-time mode only with students typically studying 60 credits per year. At Level 6 students may choose to study one, two or three years online and may study online in full-time (120 credits per year) or part-time (typically 60 credits per year) mode.

The programme is likely to appeal to mature students who are in employment and wish to study part-time and to students from overseas who wish to gain a qualification from a British university but do not wish to spend all of their time in the UK. The final year of the programme will appeal to direct entrants who have already gained 240 credits from an HND in Computer Studies or similar qualification, both those who are newly qualified and want to continue to study, perhaps whilst in employment or seeking their first job and those who qualified some years ago and would like the opportunity to 'top up' their qualification whilst still working.

For entry to Level 5, students will have completed 120 credits from an appropriate programme (Diploma in Computer Studies). In addition to accruing the appropriate number and level of credit points or equivalent, admission to the programme is on the basis that applicants have successfully completed a programme of study that is broadly equivalent to Level 4 of the campus-based based programme (CMCSITBSC).

For entry to Level 6, students will have completed 240 credits from an HND Computer Studies, Diploma or Degree or equivalent. In addition to accruing the appropriate number and level of credit points or equivalent, admission to the programme is on the basis that applicants have successfully completed a programme of study that is broadly equivalent to Levels 4 and 5 of the campus-based based programme (CMCSITBSC).

The programme recognises a broad distinction between Computer Science (CS) and Information Technology (IT) and is structured so as to allow students to progress along the two main themes of computer science and information technology. There is a common core of compulsory material to both themes in the first and second years of study to ensure that all students have the appropriate foundation for either theme.

The programme therefore equips graduates for a wide variety of careers in professional roles (not necessarily constrained to the IT industry) that involve the design, development and/or the evaluation of programmed systems, or of wider socio-technical systems involving a programmed sub-system.

Further information on entry requirements is given in section G.

B. Educational Aims of the Programme

The programme has been devised in accordance with the University's graduate attributes of programmes of study as set out in [UPR TL03](#).

Additionally this programme aims to:

provide students with the opportunities to:

- develop a range of cognitive abilities relevant to the design, development and evaluation of programmed solutions to problems;
- develop a range of practical skills relevant to the design, development and evaluation of programmed solutions to problems;
- develop a range of transferable skills including communication, logical presentation of ideas and arguments, and independent and team working; and practice these skills within the context of their studies;
- recognise and begin to appreciate the legal, social, ethical and professional issues involved in the application of their knowledge and skills to a range of problems;
- encounter a broad range of activities drawn from a variety of problem domains.

For the Computer Science awards the programme additionally aims, at a high level, to provide students with opportunities to:

- develop specific in depth technical abilities and skills that are relevant to the design, development and management of computational systems;
- develop a broad understanding of, and practical abilities in, a range of computing disciplines.

For the Information Technology award the programme additionally aims, at a high level, to provide students with opportunities to:

- develop specific in depth technical abilities and skills that are relevant to the design, development and management of computing-based systems that support information handling and decision making;
- develop a broad understanding of, and practical abilities in, a range of computing disciplines.

C. Intended Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills and other attributes in the following areas. The programme outcomes are referenced to the QAA benchmark statements for Computing and the Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies (2014) and relate to the typical student. Additionally, the SEEC Credit Level Descriptors for Further and Higher Education (2016) have been used as a guiding framework for curriculum design.

Knowledge and Understanding	Teaching and learning methods	Assessment strategy
A1- The methodology of developing programmed solutions and a subset of the tools, notations and techniques appropriate to the various stages of development, from problem identification to system implementation and evaluation.	At Level 4, A1 – A5 are introduced via specific topics using a combination of online learning materials, online tutorials and guided self-study. The material is integrated via the core theme of programmed system design, and students will be helped to appreciate these topics within this framework. Tasks will	At Level 4, A1 – A5 are assessed through a combination of primarily coursework and unseen online tests. Where appropriate, assessments will also include a component of peer assessment by students. Assessments concentrate on

A2- The complexity of interactions between agents, which could be human or programmed systems, at various levels, and the implications of this for the developer of a programme solution.

A3- The context within which a professional software designer operates and implications for professional practice including the legal, social, ethical and professional issues involved.

Additionally for BSc Computer Science (CS) award

A4- An in depth understanding of the theories and principles relevant to the design and development of programmed systems and their subsequent use in specific contexts.

Additionally for Information Technology (IT) award

A5- An in depth understanding of the theories and principles relevant to the design and development of information technology systems and their subsequent use in specific contexts.

in general concentrate on building proficiency and confidence at the topic level, and students will not be expected to work at the systems level without considerable support.

It is at Level 5 that the main routes of computer science and information technology distinguish themselves, and therefore the respective knowledge and understanding (for A4 and A5) begins to diverge.

At Level 5, for both routes, additional topics addressing A1 – A5 will be studied using a combination of online learning materials, online tutorials and guided self-study. Students will be expected to begin to integrate material and adopt a more critical and analytical attitude to their learning, and to the topics and tasks being taught.

The learning opportunities will provide insight into the range of options available for solving design problems and therefore into the selection of appropriate methodological and system components, as well as of their evaluation.

Level 5 provides the opportunity for computer science students to begin to specialise their knowledge and understanding for A1 and A2.

A3 will be addressed explicitly via online tutorials and materials, and guided self-study on specific topics.

At Level 6, learning relating to A1 – A5 is expected to be increasingly independent, critical and evaluative; and students are expected to take increasing responsibility for the selection and use of theories, principles and methods in particular contexts, and for tackling particular problems. This understanding is expected to include an appreciation of the limits of applicability of theories, the uncertainty and inherent open-

specific topics, within a provided framework, rather than on substantive integrative tasks.

At Level 5, A1 – A5 will be assessed through a more 'balanced' combination of coursework and unseen online tests. Where appropriate, assessments will also include a component of peer assessment by students. Assessments will begin to include more substantial elements of team work and project work and, through those, more substantive assessment tasks.

Students passing the four Level 4 core modules together with the appropriate Level 5 core modules will be deemed to have met the minimum threshold level in A1 – A5 necessary to progress to examination for an Honours award.

At Level 5, A3 will additionally be assessed through a team-based project.

At Level 6, A1 – A5 will again be assessed through a combination of coursework and unseen online tests; with again the opportunity for peer assessment where appropriate. There will be a substantial component of individual project-type activity, for which students will be expected to: establish for themselves the framework within which the work is carried out; select and apply knowledge and understanding as appropriate to the specific problem(s) being addressed; and evaluate solutions, reference appropriate research or scholarship.

	<p>endedness of many practical problems in computing and of the human and societal constraints on approaches to problem solution. Some material will be presented via online learning materials and online tutorials, with significant learning undertaken and achieved through independent, self-study.</p> <p>At all levels of the programme, students are encouraged to undertake independent study both to supplement and consolidate what is being taught/learnt and to broaden their individual knowledge and understanding of the subject.</p>	
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<u>Intellectual skills</u>	<u>Teaching and learning methods</u>	<u>Assessment strategy</u>
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B Not applicable under QAA Benchmarking statement. Intellectual skills are subsumed under Knowledge and Understanding

<u>Practical skills</u>	<u>Teaching and learning methods</u>	<u>Assessment strategy</u>
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<p>C1- Use specific tools, techniques, notations and methods in the context of the design and development of programmed computer systems.</p> <p>C2- Use computer systems and associated technology to support the development of programmed systems.</p> <p>C3- Engage in effective discussion of technical information as appropriate to the system design and development task.</p> <p>C4- Carry out design activities ranging from initial problem identification to system implementation and evaluation, and as an individual or participate as a member of a team carrying out a subset of these activities.</p> <p>Additionally for BSc Computer Science (CS) award</p> <p>C5- Design, implement and evaluate systems as characterised by Computer Science approaches, methodologies and practices.</p>	<p>Level 4, 5 and 6 will address C1 – C3 using online learning materials and online tutorials for the presentation of instructional material, with practical tasks, independent study and project work offering the opportunity to practise the skills in a supportive environment. The amount of instructional material will decrease as the programme progresses, with students being expected to take an increasing responsibility for developing their own skills and identifying resources to support their development.</p> <p>Level 4, 5 and 6 will address C4. The examples used at Level 4 will be simple, and considerable support will be given in problem identification and evaluation. At Levels 5, 6 this support will be increasingly reduced and more open tasks will be set. Students will be exposed to employ a variety of technologies such as operating environments, programming languages, applications and specification techniques.</p> <p>At Level 6 students will be expected to extend their skills</p>	<p>At Level 4 practical skills C1 and C2 will be assessed directly through coursework, and assessed indirectly through unseen online tests. The online tests will assess understanding that has developed, or been consolidated, as a result of practical activity.</p> <p>At Level 5, C3 and C4 are assessed, through a group design task.</p> <p>At Level 6, C1 – C6 will be assessed directly and indirectly. The independent project at Level 6 will assess C4 – C6.</p> <p>Typically, students passing the four Level 4 core modules together with the appropriate Level 5 core modules will be deemed to have met the minimum threshold level in C1 – C6 necessary to progress to examination for an Honours award.</p>
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Additionally for BSc Information Technology (IT) award

C6- Design, Implement and evaluate systems as characterised by Information Technology approaches, methodologies and practices.

developed in C1 – C6 to the task of evaluating and selecting appropriate approaches to addressing specific tasks appropriate to that level.

C1 – C6 are further developed and deepened through an individual self-defined and managed project at Level 6.

Throughout the levels of the programme, the learner is encouraged to further develop their practical skills by independent study.

Transferable skills	Teaching and learning methods	Assessment strategy
<p>D1- Communicate effectively orally, in writing and visually using the conventions, vocabulary and the form and register of academic expression.</p> <p>D2- Manage their own learning including time management, the organization and retrieval of information, and the identification of personal needs for continuing professional development.</p> <p>D3- Select and use a variety of modes of discourse, including mathematical, informal and diagrammatic.</p> <p>D4- Work effectively both independently and/or as part of a team.</p> <p>D5- Reflect upon their work and the work of others, and explain, justify and otherwise defend their work and ideas, with reference to academic, professional issues, debates and conventions.</p>	<p>Transferable skills are developed through using a variety of learning and teaching methods and strategies.</p> <p>Students are expected to take an increasing responsibility for their own learning as the programme progresses, and are supported in meeting D1 through tutoring and guided independent study using resources provided both locally and centrally (e.g. the Learning Resources Centre runs online sessions and produces self-study guides on information retrieval and similar topics). The development of confidence and ability to use more formal, mathematical, modes is addressed at Level 4 explicitly. Online workshops delivered by the English Language Teaching team within the School of Humanities on written and spoken English, are available for students having particular difficulties in meeting aspects of D2.</p> <p>Students are encouraged to form study groups at Level 4, and to start building a collaborative attitude towards studying, whilst also taking responsibility for their own learning.</p> <p>At Level 5, team-working is used explicitly in the context of a design task, and students will be supported in meeting D3 through this.</p>	<p>Transferable skills are assessed through a variety of means built into the curriculum.</p> <p>At Level 4, 5 and 6, D1 is assessed in different ways e.g. a short report at Level 4, a team presentation at Level 5, an individual presentation at Level 6.</p> <p>At Levels 4, 5 and 6, D2 is assessed by setting different kinds of task, providing feedback on those tasks to students (partly through peer assessment) and encouraging reflection by students.</p> <p>At Levels 4, 5 and 6, D3 is assessed in different ways, depending on the topic and the nature of the assessment. Additionally, the independent project at Level 6 provides opportunities for students to select appropriate modes of discourse for the problem(s) they are seeking to address.</p> <p>At Level 5, D4 is assessed for group work.</p> <p>At Level 6, D4 is assessed through the independent project.</p> <p>At Level 6, D5 is assessed by reviewing the outcomes of assignments as well as</p>

D5 is developed through exposure to contemporary issues at Level 5 and beyond.

At Level 6, the project addresses D1 – D5, together with the independent aspects of D4.

During the course of the programme, assessed and non-assessed work encourages the learner to develop a wide range of transferable skills. In Level 4, this starts with closely defined and directed assignments. At Level 5 the learner is encouraged by more loosely defined projects and at Level 6, these are supported through the self-definition of work in the project. Throughout, the learner is encouraged to develop transferable skills by maintaining a record of evidence and completing a personal development plan.

through peer assessment, where appropriate.

D. Programme Structures, Features, Levels, Modules, and Credits

The programme is offered in multiple modes of study. Level 4 is available as part-time only and Levels 5 & 6 are available as both part-time and full time, with multiple intakes per year (for example, September, January and May), leading to the following study periods:

- **For entry at Level 4 the programme in its entirety is offered in two study patterns:**
 - a. an entirely part-time study pattern (6 years in duration); or,
 - b. a study pattern which offers part-time study for Level 4 and then mixture of part-time and full-time study for Levels 5 and 6 (4-5 years in duration).
- **For entry at Level 5 the programme in its entirety is offered in two study patterns:**
 - a. an entirely part-time study pattern (4 years in duration); or,
 - b. a study pattern which offers part-time study for Level 5 and then full-time study for Level 6 (3 years in duration).

- **For entry at Level 6 the programme in its entirety is offered in two study patterns:**
 - a. an entirely part-time study pattern (2 years in duration); or,
 - b. an entirely full-time study pattern (1 year in duration).

This programme leads to the award of a BSc Degree with Honours in Computer Science, BSc Degree with Honours in Information Technology. For the BSc award, entry is normally at Level 4, but entry is also possible at Level 5 and at Level 6 with appropriate entry qualifications. (See further information in section G)

Once a BSc student has progressed to Level 5 and the student has made the decision to study for the Information Technology degree or for the Computer Science degree, the student has no automatic right to transfer between the BSc Computer Science and BSc Information Technology themes/routes. Requests to transfer between themes/routes will however be considered on a case by case basis.

Professional and Statutory Regulatory Bodies

Programme Structure

The programme structure is presented in Table 1a-1 through Table 1a-6, with progression information provided in Table 1b. Final awards are identified in Table 1c-1. Interim awards are identified in Table 1c-2. The Programme Learning Outcomes are developed and assessed through the constituent modules. Table 2 identifies where each Programme Learning Outcome is assessed in modules.

The School operates on minimum student numbers. All optional modules are offered subject to student demand and other operational constraints. This programme specification does not commit the School to make optional modules available to students choosing to take a module as an option. In addition, not all the compulsory modules at Level 4 are offered yearly due to the nature that the programme offers only part-time study pattern at this level. Furthermore, Table 1a-1 through Table 1a-6 indicate which Level 4, 5 and 6 modules might operate in which semester. In reality, the programme publishes an annual calendar showing which semester modules operate in, for that cycle. The order of delivery may vary depending on the intake. Tables 3 and 4 provide examples of possible study patterns.

Table 1a-1: Level 4 modules for all BSc (Hons) routes through the programme

Compulsory Modules Module Titles	Online Module code	Credits	Language of delivery	% examination	% coursework	% practical	Semester
Platforms for Computing (COM)	4WCM0019	30	English	0	100	0	B
Human Dimensions of Computing (COM)	4WCM0020	30	English	0	100	0	A, C
Models and Methods in Computing (COM)	4WCM0021	30	English	0	100	0	B
Programming (COM)	4WCM0022	30	English	0	100	0	A

Table 1a-2: Level 5 modules for BSc(Hons) Computer Science route

Compulsory Modules Module Titles	Online Module code	Credits	Language of delivery	% examination	% coursework	% practical	Semester
Operating Systems and Computer Networks (COM)	5WCM0011	30	English	0	100	0	A
Programming, Algorithms and Data Structures (COM)	5WCM0017	30	English	0	100	0	A
Software Development Exercise (COM)	5WCM0018	30	English	0	100	0	B
Contemporary Issues (COM)	5WCM0019	15	English	0	100	0	B
Databases (COM)	5WCM0020	15	English	0	100	0	B

Table 1a-3: Level 5 modules for BSc (Hons) Information Technology route

Compulsory Modules Module Titles	Online Module code	Credits	Language of delivery	% examination	% coursework	% practical	Semester
Operating Systems and Computer Networks (COM)	5WCM0011	30	English	0	100	0	A
Software Development Exercise (COM)	5WCM0018	30	English	0	100	0	B
Contemporary Issues (COM)	5WCM0019	15	English	0	100	0	B
Databases (COM)	5WCM0020	15	English	0	100	0	A
IT in Organisations (COM)	5WCM0022	30	English	0	0	0	A

Table 1a-4: Compulsory Level 6 modules for BSc (Hons) Computer Science

Compulsory Modules Module Titles	Online Module code	SDL Module Code	Credits	Language of delivery	% examination	% coursework	% practical	Semester
Programming and Software Engineering Practice (COM)	6WCM0027	6WCM0028	30	English	0	100	0	B
Computer Science Project (COM)	6WCM0029	6WCM0030	30	English	0	100	0	B, C
Project Planning (COM)	6WCM0041	6WCM0042	15	English	0	100	0	A, B

Table 1a-5: Compulsory Level 6 modules for BSc (Hons) Information Technology

Compulsory Modules Module Titles	Online Module code	SDL Module Code	Credits	Language of delivery	% examination	% coursework	% practical	Semester
Web Scripting (COM)	6WCM0037	6WCM0038	30	English	0	100	0	B
Information Technology Project (COM)	6WCM0039	6WCM0040	30	English	0	100	0	B, C
Project Planning (COM)	6WCM0041	6WCM0042	15	English	0	100	0	A, B

Table 1a-6: Level 6 Optional 15-credit Modules

Optional Modules Module Titles	Online Module code	SDL Module Code	Credits	Language of delivery	% examination	% coursework	% practical	Semester
Computer Systems Security (COM)	6WCM0032	6WCM0031	15	English	0	100	0	A
Mobile Computing (COM)	6WCM0034	6WCM0033	15	English	0	100	0	A

Table 1a-7: Level 6 Optional 30-credit Modules

Optional Modules Module Titles	Online Module code	SDL Module Code	Credits	Language of delivery	% examination	% coursework	% practical	Semester
Quantum Computing (COM)	6WCM0019	6WCM0020	30	English	0	100	0	B
User Experience Design (COM)	6WCM0025	6WCM0026	30	English	0	100	0	C
Data Mining and Visualisation (COM)	6WCM0035	6WCM0036	30	English	0	100	0	A

Students may include 30 credits of modules at level 6 from subject areas outside of Computer Science in meeting the credit points total for the Honours Degree and each of the interim awards. In the case of the Honours Degrees, they must pass all the contributory modules for their award.

The award of an Honours degree requires 360 credit points, with a minimum of 120 at Level 6, including the relevant final year project.

Progression

UPR AS14 contains the University regulations governing the awards of this programme. Programme-specific progression requirements are presented in Table 1b. Programme-specific minimum requirements for eligibility to final and interim awards are presented, respectively, in Tables 1c-1 and 1c-2.

Table 1b: Programme-specific progression requirements

From any of: (course instances)	To any of: (course instances)	Minimum Requirements
Level 4 (year 1 pt) CSWA1DP CSWB1DP-1 CSWC1DP-1 ITWA1DP ITWB1DP-1 ITWC1DP-1	Level 4 (year 2 pt) CSWA2DP CSWB2DP-1 CSWC2DP-1 ITWA2DP ITWB2DP-1 ITWC2DP-1	30 to 60 credits at Level 4.
Level 4 (year 2 pt) CSWA2DP CSWB2DP-1 CSWC2DP-1 ITWA2DP ITWB2DP-1 ITWC2DP-1	Level 5 (year 3 pt) CSWA3DP CSWB3DP-1 ITWA3DP ITWB3DP-1 Level 5 (year 3 ft) CSWA3DF ITWA3DF	120 credit points at Level 4 including a pass in 4WCM0022 Programming (COM). <i>or</i> 90 credit points at Level 4 including a pass in 4WCM0022 Programming (COM). Any level 4 shortfall should be redeemed at the first available opportunity. The maximum study rate permissible is 90 credits per 2 semesters.
Level 5 (year 3 pt) CSWA3DP CSWB3DP-1 ITWA3DP ITWB3DP-1	Level 5 (year 4 pt) CSWA4DP CSWB4DP-1 ITWA4DP ITWB4DP-1	120 credit points at Level 4, plus 30 to 60 credit points at Level 5.
Level 5 (year 4 pt) CSWA4DP CSWB4DP-1 ITWA4DP ITWB4DP-1 Level 5 (year 3 ft) CSWA3DF ITWA3DF	Level 6 (year 5 pt) CSWA5DP-1 CSWB5DP-1 ITWA5DP-1 ITWB5DP-1 Level 6 (year 5 ft) CSWA5DF ITWA5DF Level 6 (year 4 pt) CSWA4DP ITWA4DP Level 6 (year 4 ft) CSWA4DF ITWA4DF	120 credit points at Level 4 plus 120 credit points at Level 5. <i>or</i> 210 credit points (including 90 credits at Level 5) The maximum study rate permissible is 150 credits per year. The Level 4 / Level 5 shortfall should be redeemed at the first available opportunity.
Level 6 (year 5 pt) CSWA5DP-1 CSWB5DP-1 ITWA5DP-1 ITWB5DP-1	Level 6 (year 6 pt) CSWA6DP-1 CSWB6DP-1 ITWA6DP-1 ITWB6DP-1	120 credit points at Level 4 and 120 credit points at Level 5 and 30 to 60 credits at Level 6.
Level 6 (year 5 pt) (top-up) CSWTA5DP-1 CSWTB5DP-1 CSWTC5DP-1 ITWTA5DP-1 ITWTB5DP-1 ITWTC5DP-1	Level 6 (year 6 pt) (top-up) CSWTA6DP-1 CSWTB6DP-1 CSWTC6DP-1 ITWTA6DP-1 ITWTB6DP-1 ITWTC6DP-1	30 to 60 credits at Level 6.

Honours classification

The University has approved structure and assessment regulations common to all programmes. Full details are provided in [UPR AS14](#), Section D.

Final and interim awards

The programme provides for the following final (see Table 1c-1) and interim awards (see Table 1c-2).

Table 1c-1: Final Awards

Final Award	Award Title	Minimum requirements	Available at end of Level	Programme Learning Outcomes developed (see above)
BSc (Hons)	Computer Science	360 credit points including 240 at level 6/5 of which 120 must be at level 6 and include: <ul style="list-style-type: none"> 6WCM0027/6WCM0028 Programming and Software Engineering Practice; successful completion of the award-specific final year project. 	6	All programme learning outcomes (see Table 2)
BSc (Hons)	Information Technology	360 credit points including 240 at level 6/5 of which 120 must be at level 6 and include: <ul style="list-style-type: none"> 6WCM0037/6WCM0038 Web Scripting; Successful completion of the award-specific final year project. 	6	All programme learning outcomes (see Table 2)

Table 1c-2: Interim Awards

Interim Award	Award Title	Minimum requirements	Available at end of Level	Programme Learning Outcomes developed (see above)
University Certificate		45 credit points at level 4	4	See UPR AS11, section 13: http://sitem.herts.ac.uk/secreg/upr/AS11.htm
Certificate of Higher Education		120 credit points at level 4	4, 5	See UPR AS11, section 13: http://sitem.herts.ac.uk/secreg/upr/AS11.htm
Diploma of Higher Education	Computer Science	240 credit points including at least 120 at level 5; for students on the CS route of the programme.	5, 6	A1, A2, A3, A4, C1, C2, C4, C5, D1, D2, D3, D4
Diploma of Higher Education	Information Technology	240 credit points including at least 120 at Level 5 for students on the IT route of the programme.	5, 6	A1, A2, A3, A5, C1, C2, C4, C6, D1, D2, D3, D4
BSc	Computer Science	300 credit points including 180 at level 6/5 of which 60 must be at level 6.	6	A1, A2, A3, A4, C1, C2, C3, C4, C5, D1, D2, D3, D4, D5

		Direct entrants at Level 6 must meet the minimum University of Hertfordshire credit and level requirements defined in UPR AS11 , including a minimum of 75 UH credits at Level 6 (the maximum APL is 225 credits at Levels 4 and 5).		
BSc	Information Technology	<p>300 credit points including 180 at level 6/5 of which 60 must be at level 6 and include 6WCM0027/6WC M0028 Web Scripting or 6WCM0039/6WC M0040 Information Technology Project.</p> <p>Direct entrants at Level 6 must meet the minimum University of Hertfordshire credit and level requirements defined in UPR AS11, including a minimum of 75 UH credits at Level 6 (the maximum APL is 225 credits at Levels 4 and 5).</p>	6	A1, A2, A3, A5, C1, C2, C3, C4, C6, D1, D2, D3, D4, D5

Programme-specific assessment regulations

The programme is compliant with the University's academic regulations ([UPR AS11](#), [UPR AS12](#) or [UPR AS13](#), [UPR AS14](#)) with the exception of those listed below, which have been specifically approved by the University:

Refer to Table 9 for a summary of the progression requirements of the programme.

Period of registration: The maximum period within which a student may gain an award on the programme is eight years from the student's first date of registration on it for students who joined the programme at Level 4. The maximum period of registration for students who joined the programme at Level 6 is four years.

Final year BSc projects: A student cannot be compensated for the final year project.

Eligibility for a specialist Honours award: To be eligible for a specialist Honours award, a student must pass, or be accredited with passes, in the compulsory modules for that award as identified in Table 1a-1 through Table 1a-6, as well as a pass (without compensation) in the project module for that award.

Typically, students must have studied and passed at least 45 credits prior to enrolling on the final year project module, including the 6WCM0041/6WCM0042 Project Planning module.

E. Management of Programme & Support for student learning.

Management

The programme is managed and administered through:

- Dean of School
- The Associate Dean of School (Academic Quality Assurance) and the Associate Dean of School (Teaching and Learning) who have overall responsibility for programmes
- The Programme Leader who helps students understand the programme structure
- Student representatives on programme committees;
- A designated programme administrator
- Module Leaders
- Admission Tutor who is with specific responsibility for open days, recruitment and selection of students
- Programme Committee, the membership of which is defined by the Standing Orders of the Academic Board

Support

Students are supported by:

- An induction week at the beginning of each new academic session
- A Programme Leader to help students understand the programme structure, and provide pastoral support
- Academic support which will be provided by academic staff who have individual responsibility for a group of students on a module
- Student representatives on programme committees
- A designated programme administrator
- Studynet, a versatile online inter-active intranet and learning environment
- Guided student-centred learning on Studynet module sites
- A range of online learning materials and activities specially designed to support students in their studies
- Study materials specially designed and developed by a team of Educational Technologists taking into account online delivery and who advise on the of technology to enhance the design of learning, teaching and assessment experiences
- Access to extensive digital and print collections of information resources
- A substantial Student Centre that provides advice on issues such as finance, University regulations, legal matters, etc
- Office of Dean of Students, incorporating Counselling
- University Disability Advisors
- An Equality Office
- Careers Enterprise and Employment Services
- The Students' Union

F. Other sources of information

In addition to this Programme Specification, the University publishes guidance to registered students on the programme and its constituent modules:

- A Programme Handbook;
- A Definitive Module Document (DMD) for each constituent module;
- A Module Guide for each constituent module.

The [Ask Herts](#) website provides information on a wide range of resources and services available at the University of Hertfordshire including academic support, accommodation, fees, funding, visas, wellbeing services and student societies.

As a condition of registration, all students of the University of Hertfordshire are required to comply with the University's rules, regulations and procedures. These are published in a series of documents called 'University Policies and Regulations' (UPRs). The University requires that all students consult these documents which are available on-line, on the UPR web site, at: <http://www.herts.ac.uk/secreg/upr/>. In particular, [UPR SA07](#) 'Regulations and Advice for Students' Particular Attention - Index' provides information on the UPRs that contain the academic regulations of particular relevance for undergraduate and taught postgraduate students.

In accordance with section 4(5) of the Higher Education and Research Act 2017 (HERA), the UK Office for Students (OfS) has registered the University of Hertfordshire in the register of English higher education providers. The Register can be viewed at: <https://www.officeforstudents.org.uk/advice-and-guidance/the-register/the-ofs-register/>. Furthermore, the OfS has judged that the University of Hertfordshire delivers consistently outstanding teaching, learning and outcomes for its students. It is of the highest quality found in the UK. Consequently, the University received a Gold award in the 2018 Teaching Excellence and Student Outcomes (TEF) exercise. This award was made in June 2018 and is valid for up to 3 years. The TEF panel's report and conclusions can be accessed at: <https://www.officeforstudents.org.uk/advice-and-guidance/teaching/tef-outcomes/#/provider/10007147>

G. Entry requirements

The normal entry requirements for the programme are:

For current entry tariff point requirements, please refer to the relevant page for the Course on the University website or on the online prospectus.

The programme is subject to the University's Principles, Policies and Regulations for the Admission of Students to Undergraduate and Taught Postgraduate Programmes (in [UPR SA03](#)), along with associated procedures. These will take account of University policy and guidelines for assessing accredited prior certificated learning (APCL) and accredited prior experiential learning (APEL).

If you would like this information in an alternative format please contact:
AskUHOnline@herts.ac.uk.

If you wish to receive a copy of the latest Programme Annual Monitoring and Evaluation Report (AMER) and/or the External Examiner's Report for the programme, please email a request to bsconlinetutor@herts.ac.uk

Table 2: Development of Intended Programme Learning Outcomes in the Constituent Modules

This map identifies where the programme learning outcomes are assessed in the constituent modules. It provides (i) an aid to academic staff in understanding how individual modules contribute to the programme aims (ii) a checklist for quality control purposes and (iii) a means to help students monitor their own learning, personal and professional development as the programme progresses.

				Programme Learning Outcomes (as identified in Section 1 and the following page)															
				Knowledge & Understanding					Practical Skills						Transferable Skills				
Level	Module Title	Module Code	Compulsory (C) or Optional (O)	A1	A2	A3	A4	A5	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5
Level 4	Human Dimensions of Computing	4WCM0020	C		X	X			X						X	X		X	X
	Programming	4WCM0022	C	X	X				X			X				X			
	Models and Methods in Computing	4WCM0021	C	X					X							X	X		
	Platforms for Computing	4WCM0019	C	X	X											X			
Level 5	Programming, Algorithms and Data Structures	5WCM0017	C (CS)	X			X		X			X	X			X	X		
	IT in Organisations	5WCM0022	C (IT)			X		X				X		X		X			
	Contemporary Issues	5WCM0019	C			X									X	X			
	Databases	5WCM0020	C	X					X			X				X			
	Software Development Exercise	5WCM0018	C	X	X	X			X	X	X	X	X	X	X	X	X	X	X
	Operating Systems and Networks	5WCM0011	C		X		X			X			X			X			

				Programme Learning Outcomes (as identified in Section 1 and the following page)																
				Knowledge & Understanding					Practical Skills						Transferable Skills					
Level	Module Title	Module Code	Compulsory (C) or Optional (O)	A1	A2	A3	A4	A5	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5	
Level 6	Programming and Software Engineering Practice	6WCM0027/ 6WCM0028	C (CS)	X			X		X	X	X	X	X			X	X			
	Computer Science Project	6WCM0029/ 6WCM0030	C(CS)	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	
	Web Scripting	6WCM0037/ 6WCM0038	C (IT)	X	X	X		X								X				
	Information Technology Project	6WCM0039/ 6WCM0040	C(IT)	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	
	Project Planning	6WCM0041/ 6WCM0042	C	X		X	X		X						X	X			X	
	User Experience Design	6WCM0025/ 6WCM0026	O		X	X	X	X	X			X	X	X	X	X			X	X
	Data Mining and Visualisation	6WCM0035/ 6WCM0036	O		X		X	X	X				X			X	X			
	Quantum Computing	6WCM0019/ 6WCM0020	O				X		X				X			X	X			
	Mobile Computing	6WCM0034/ 6WCM0033	O	X			X		X				X			X				
	Computer Systems Security	6WCM0032/ 6WCM0031	O	X	X	X					X					X				

KEY TO PROGRAMME LEARNING OUTCOMES

Knowledge and Understanding

- A1. The methodology of developing programmed solutions and a subset of the tools, notations and techniques appropriate to the various stages of development, from problem identification to system implementation and evaluation.
- A2. The complexity of interactions between agents, which could be human or programmed systems, at various levels, and the implications of this for the developer of a programme solution.
- A3. The context within which a professional software designer operates and implications for professional practice including the legal, social, ethical and professional issues involved.
Additionally for BSc Computer Science (CS)
- A4. An in depth understanding of the theories and principles relevant to the design and development of programmed systems and their subsequent use in specific contexts.
Additionally for Information Technology (IT) award
- A5. An in depth understanding of the theories and principles relevant to the design and development of information technology systems and their subsequent use in specific contexts.

Intellectual Skills

Not applicable under QAA Benchmarking statement. Intellectual skills are subsumed under Knowledge and Understanding

Practical Skills

- C1 Use specific tools, techniques, notations and methods in the context of the design and development of programmed computer systems.
- C2 Use computer systems and associated technology to support the development of programmed systems.
- C3 Engage in effective discussion of technical information as appropriate to the system design and development task.
- C4 Carry out design activities ranging from initial problem identification to system implementation and evaluation, and as an individual or participate as a member of a team carrying out a subset of these activities.
Additionally for BSc Computer Science (CS) award
- C5 Design, implement and evaluate systems as characterised by Computer Science approaches, methodologies and practices.
Additionally for BSc Information Technology (IT) award
- C6 Design, Implement and evaluate systems as characterised by Information Technology approaches, methodologies and practices. [For BSc IT degree titles]

Transferable Skills

- D1 Communicate effectively orally, in writing and visually using the conventions, vocabulary and the form and register of academic expression.
- D2 Manage their own learning including time management, the organization and retrieval of information, and the identification of personal needs for continuing professional development.
- D3 Select and use a variety of modes of discourse, including mathematical, informal and diagrammatic.
- D4 Work effectively both independently and/or as part of a team.
- D5 Reflect upon their work and the work of others, and explain, justify and otherwise defend their work and ideas, with reference to academic, professional issues, debates and conventions.

Section 2

Programme management

Relevant QAA subject benchmarking statements	Computing September 2017
Type of programme	Undergraduate
Date of validation/last periodic review	February 16
Date of production/ last revision of PS	March 2020
Relevant to level/cohort	All levels/ September 2020
Administrative School	School of Engineering and Computer Science

Table 3 Course structure

Course details		
Course code	Course description	JACS/ HECOS
CMWCSIT	Modular BSc (Hons) Computer Science (Online)	N/A

Course details		
Course code	Course description	JACS/ HECOS
CMWSLCSIT	Modular BSc (Hons) Computer Science (Supported Distance Learning)	N/A

Table 4a: Indicative Patterns of Study (in for example, September and January intakes Levels 4 and 5)

Modular BSc Honours in Computer Science (online)

The tables below show the indicative pattern of study for students joining the programme in, for example, September and January at Levels 4 and 5. Level 4 is available part-time only and Level 5 is available in either part-time or full-time mode. The programme is designed to operate with multiple intakes per year and the months shown in the table below provide examples of possible study patterns.

Year of Study / Month	BSc Computer Science award	BSc Information Technology award	Year of Study / Month	BSc Computer Science award	BSc Information Technology award
Year 1 / September	4WCM0020	4WCM0020	Year 1 / January	4WCM0021	4WCM0021
Year 1 / January	4WCM0021	4WCM0021	Year 1 / September	4WCM0022	4WCM0022
Year 2 / September	4WCM0022	4WCM0022	Year 2 / January	4WCM0019	4WCM0019
Year 2 / January	4WCM0019	4WCM0019	Year 2 / September	4WCM0020	4WCM0020
Year 3 / September	5WCM0017	5WCM0022	Year 3 / January	5WCM0018	5WCM0018
Year 3 / January	5WCM0018	5WCM0018	Year 3 / September	5WCM0011	5WCM0011
Year 4 / September	5WCM0011	5WCM0011	Year 4 / January	5WCM0019 5WCM0020	5WCM0019 5WCM0020
Year 4 / January	5WCM0019 5WCM0020	5WCM0019 5WCM0020	Year 4 / September	5WCM0017	5WCM0022

Table 4b: Indicative Patterns of Study (in for example, September, January and May intakes Level 6)

The tables below show indicative patterns of study for students joining or progressing to Level 6 in, for example, a January or September start. Level 6 is available in either full-time or part-time mode. The precise pattern of study is determined by the study mode and student choice.

The programme is designed to operate with multiple intakes per year and the months shown in the table below provide examples of possible study patterns. Table 11 defines which modules are core for an award and which are electives.

Year of Study / Month	BSc Computer Science award	BSc Information Technology award	Year of Study / Month	BSc Computer Science award	BSc Information Technology award	Year of Study / Month	BSc Computer Science award	BSc Information Technology award
Year 1 / September	6WCM0041 6WCM0035/36 <u>or</u> 6WCM0032/31 <u>or</u> 6WCM0034/33	6WCM0041 6WCM0035/36 <u>or</u> 6WCM0032/31 <u>or</u> 6WCM0034/33	Year 1 / January	6WCM0027/28 6WCM0041 6WCM0019/20	6WCM0037/38 6WCM0041 6WCM0019/20	Year 1 / May	6WCM0041 6WCM0025/26	6WCM0041 6WCM0025/26
Year 1 / January	6WCM0027/28 6WCM0029/30 6WCM0019/20	6WCM0037/38 6WCM0039/40 6WCM0019/20	Year 1 / May	6WCM0029/30 6WCM0025/26	6WCM0039/40 6WCM0025/26	Year 2 / September	6WCM0035/36 <u>or</u> 6WCM0032/31 <u>or</u> 6WCM0034/33	6WCM0035/36 <u>or</u> 6WCM0032/31 <u>or</u> 6WCM0034/33
Year 1 / May	6WCM0025/26	6WCM0025/26	Year 2 / September	6WCM0035/36 <u>or</u> 6WCM0032/31 <u>or</u> 6WCM0034/33	6WCM0035/36 <u>or</u> 6WCM0032/31 <u>or</u> 6WCM0034/33	Year 2 / January	6WCM0027/28 6WCM0019/20 6WCM0029/30	6WCM0037/38 6WCM0019/20 6WCM0039/40