

UNIVERSITY OF KENT
Programme Specification

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she passes the programme. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each module can be found by following the links from:

<http://www.cs.kent.ac.uk/teaching/>.

The accuracy of the information contained in this specification is reviewed by the University and may be checked by the Quality Assurance Agency for Higher Education.

Degree and Programme Title
Joint Honours Programmes in Applied Computing

1. Awarding Institution/Body	University of Kent
2. Teaching Institution	University of Kent
3. Teaching Site	Canterbury
4. Programme accredited by:	
5. Final Award	BSc (Hons)
6. Programmes and	NG24 Management Science and Computing
7. UCAS Codes	NG24 Management Science and Computing with a year in Industry GL41 Computing and Economics GL41 Computing and Economics with a year in industry CG84 Computing and Psychology
5. Final Award	BA (Hons)
6. Programmes and	GN44 Accounting & Finance and Computing
7. UCAS Codes	GN44 Computing and Accounting with a year in industry QG84 Classical & Archaeological Studies and Computing WG44 Computing and Drama QG34 Computing and English & American Literature GQ43 Computing and English, American & Postcolonial Literatures RG94 Computing and European Studies WG64 Computing and Film Studies RG14 Computing and French RG24 Computing and German VG14 Computing and History VG34 Computing and History & Theory of Art RG34 Computing and Italian VG54 Computing and Philosophy VG64 Computing and Religious Studies GG43 Computing and Social Statistics GR44 Computing and Hispanic Studies
8. Relevant QAA subject benchmarking group/s	Computing 2007
9. Date of production/revision	June 2012
10. Applicable cohort/s	2012 entry onwards

11. Educational Aims of the Programme	
The programme aims to:	
1.	To provide a program which will attract and meet the needs of those contemplating a career involving a significant element of computing and those motivated by an intellectual interest in applied computing.
2.	To provide a sound knowledge and systematic understanding of the principles of computing.
3.	To provide generally applicable skills which will be of lasting value in a constantly changing field.
4.	To offer a range of modules covering the foundations of computing.
5.	To offer a range of options to enable students to study selected areas of computing in depth.
6.	To provide teaching which is informed by current research and scholarship and which requires students to engage with aspects of work at the frontiers of knowledge.
7.	To develop general critical, analytical and problem solving skills which can be applied in a wide range of different computing and non-computing settings.

12. Programme Outcomes	
The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas. The programme outcomes have references to the subject benchmarking statements for Computing (SB).	
Knowledge and Understanding	Teaching/learning and assessment methods and strategies used to enable outcomes to be achieved and demonstrated
A. Knowledge and Understanding of:	
1. Hardware: the major functional components of a computer system.	Teaching/Learning Acquisition is through lectures, supported in most modules by supervised classes and laboratory work. Self-directed learning is facilitated by study guides and web-based material. Assessment Assessment is through a combination of unseen written examinations, assessed coursework and both individual and group project work. Coursework consists of both written reports and practical assignments.
2. Software: programming languages and practice; tools and packages; computer applications; structuring of data and information.	
3. Communications and interaction: basic computer communication network concepts; communication between computers and people; the control and operation of computers.	
4. Practice: problem identification and analysis; design development, testing and evaluation.	
Skills and Other Attributes	
B. Intellectual Skills:	
1. Modelling: knowledge and understanding in the modelling and design of computer-based systems in a way that demonstrates comprehension of the trade-off involved in design choices. (CO-SB 3.2)	Teaching/Learning Acquisition is through lectures, supported in most modules by supervised classes and laboratory work. Self-directed learning is facilitated by study guides and web-based material. Assessment Assessment is through a combination of unseen written examinations, assessed coursework and both individual and group project work. Coursework consists of both written reports and practical assignments.
2. Reflection and communication: present succinctly to a range of audiences rational and reasoned arguments. (CO-SB 3.2)	
3. Requirements: identify and analyse criteria and specifications appropriate to specific problems and plan strategies for their solution. (CO-SB 3.2)	
4. Criteria evaluation and testing: analyse the extent to which a computer-based system meets the criteria defined for its current use and future development. (CO-SB 3.2)	
5. Methods and tools: deploy appropriate theory, practices and tools for the specification, design, implementation, and evaluation of computer-based systems. (CO-SB 3.2)	
6. Professional responsibility: Recognize and be guided by the professional, economic, social, environmental, moral and ethical issues involved in the sustainable exploitation of computer technology. (CO-SB3.2)	
7. Computational thinking: demonstrate a basic analytical ability and its relevance to everyday life. (CO-SB3.2)	

<p>C. Subject-specific Skills:</p> <ol style="list-style-type: none"> 1. Design and implementation: specify, design and implement computer-based systems. (CO-SB 3.2) 2. Evaluation: evaluate systems in terms of general quality attributes and possible trade-offs presented within the given problem. (CO-SB 3.2) 3. Information management: apply the principles of effective information management, information organisation, and information retrieval skills to information of various kinds. (CO-SB 3.2) 4. Tools: deploy effectively the tools used for the construction and documentation of software, with particular emphasis on understanding the whole process involved in using computers to solve practical problems. (CO-SB 3.2) 	<p>Teaching/Learning Acquisition is through lectures, supported in most modules by supervised classes and laboratory work. Self-directed learning is facilitated by study guides and web-based material.</p> <p>Assessment Assessment is through a combination of unseen written examinations, assessed coursework and both individual and group project work. Coursework consists of both written reports and practical assignments.</p>
<p>D. Transferable Skills:</p> <ol style="list-style-type: none"> 1. Teamwork:: Be able to work effectively as a member of a development team. (CO-SB 3.3) 2. Communicaton: make succinct presentations to a range of audiences about technical problems and their solutions. (CO-SB 3.2) 3. Information Technology: effective information-retrieval skills (including the use of browsers, search engines and catalogues). Effective use of general IT facilities. (CO-SB 3.3) 5. Self management: managing one's own learning and development including time management and organisational skills. (CO-SB 3.3) 	<p>Teaching/Learning General IT facilities are used throughout the programme for the preparation of written work. Browsers, search engines and catalogues are used for research and self-study material. All students have the opportunity to work within teams and make presentations of their work to both their peers and academic staff.</p> <p>Assessment These skills are not formally assessed in themselves although all have an impact on the assessment of coursework and projects.</p>
<p>For more information on which modules provide which skills, see the module mapping</p>	

13. Programme Structures and Requirements, Levels, Modules, Credits and Awards

Joint programmes in Applied Computing are studied over three years full-time, or four years for programmes involving a year in industry or a year abroad. In the four year programmes the extra year is between the second and final years

The three taught years of the programme are each arranged in 2 x 12 week terms and a final 6 week term, 30 weeks in total. The programme is divided into study blocks called modules. Most modules have a credit value of 15 or 30 credits. Each 15-credit module represents approximately 150 hours of student learning, endeavour and assessment. All students take required modules, and are advised to take, but need not take, recommended modules. In each taught year, all students must take modules amounting to 120 credits, making up their choices from the list of optional modules. Required modules must be passed before progressing to the next year of the programme.

Programmes are divided into three stages (four when a year in industry is included). Each taught stage comprising 120 credits represents an academic year of study and students must achieve specified requirements before being permitted to proceed to the next stage. Study is undertaken at three ascending levels, Certificate (C), Intermediate (I) and Honours (H). To be eligible for the award of an honours degree from a three year programme, students normally have to obtain 360 credits, at least 210 of which must be at level I or above, and at least 90 of which must be at level H or above.

Note: For details of the year in industry and year abroad programmes, and the number of credits required to be eligible for an honours degree, see the programme specification for the other major subject.

For all joint degree programmes, the 240 credits gained during the second and final stages must include a minimum of 90 credits and a maximum of 150 credits in each of the two major subjects. A minimum of 45 credits at level H or above must come from Computing modules.

At its discretion the University allows for narrow failure in a small proportion of modules to be compensated by good performance in other modules or, in cases of documented illness or other mitigating circumstances, condoned. Failure in certain modules, however, may not be compensated or condoned, as indicated by the symbol + below.

The structure of the joint programmes and the modules which make them up, their levels, credits and the terms in which they are taught, are shown below. Details of each module can be found at <http://www.cs.kent.ac.uk/teaching/>

Code	Title	Level	Credits	Term(s)
Stage 1				
Required Modules: a minimum of 30 and a maximum of 60 credits:				
CO320	Introduction to Object Oriented Programming	C	15	1
CO324	Computer Systems	C	15	1
CO323	Databases and the web	C	15	2
CO520	Further Object Oriented Programming	I	15	2
CO328	Human Computer Interaction	C	15	2

Stage 2				
Required Modules				
CO320	Introduction to Object-Oriented Programming (<i>if not taken in Stage 1</i>)	C	15	1
CO520	Further Object Oriented Programming (<i>if not taken in Stage 1</i>)	I	15	2
CO510	Software Engineering (<i>if CO520 was taken in stage 1</i>)	I	30	1 & 2
Optional Modules				
CO518	Algorithms Correctness and Efficiency	I	15	1
CO539	Web development	I	15	1
CO527	Operating Systems and Architecture	I	15	2
CO532	Database Systems	I	15	2
CO639	e-Commerce	H	15	2
	<i>Any module from the list of Stage 1 optional modules.</i>	C/I/H	15	2
Stage 3				
Required Modules				
CO510	Software Engineering (<i>if not taken in stage 2</i>)	I	30	1 & 2
Plus either				
CO600+	Project (Computing group project)	H	30	1&2
Or				
CO620+	Project (Computing individual project)	H	30	1&2
Optional Modules (Indicative)				
<i>Those marked * are only available to students who can demonstrate appropriate background knowledge</i>				
CO636	Cognitive Neural Networks *	H	15	1
CO637	Natural Computation	H	15	1
CO639	e-Commerce	H	15	2
CO641	Computer Graphics and Animation *	H	15	1
CO643	Computing Law and Professional Responsibility	H	15	2
CO646	Computing in the Classroom	H	15	2
CO831	Mobile and Ubiquitous Computing	M	15	2
CO832	Data Mining and Knowledge Discovery	M	15	2
	<i>Any module from the list of Stage 2 optional modules.</i>	C/I/H	15	2

14. Support for Students and their Learning

- Subject-specific orientation
- Computing Induction Talk at Stage 1
- On-line Student Data System
- Relevant Faculty Programme Handbooks
- An extensive Computing Laboratory website containing
 - information on all Computing modules including where appropriate
 - Module Learning Outcomes
 - specification
 - details of any classes
 - module assessment
 - course material
 - anonymous question pages
 - past examination papers
 - staff/student liaison information including
 - details of student representatives
 - minutes of meetings
- Administrative support via the Course Administration Office
- University central support services
 - Unit for the Enhancement of Learning and Teaching
 - Careers Service
 - Medical Centre
 - Counselling Service
 - Computing Service
 - Library Service
 - Disability and Dyslexia Support Service
 - Centre for English and World Languages.

15. Entry Profile

Entry Route

For fuller information, please refer to the University prospectus

For all joint programmes in Applied Computing, students are admitted by the other joint department. For details of entry routes, see the appropriate programme specification issued by that department.

Note: for students who are not native speakers of English the standard IELTS requirements will apply.

What does this programme have to offer?

- High quality teaching that was rated “Excellent” after a visit by independent assessors from the Higher Education Funding Council
- Teaching that is informed by research activity, using research-led teaching whenever possible
- The development of a range of skills that are highly sought after by employers and which open up a wide range of careers to graduates
- Programming, modelling and design skills you can use throughout your career

Personal Profile

Desirable qualities include:

- an enthusiasm about computing and related subjects
- a willingness to accept new ideas and be flexible in your thinking
- a willingness to work with others
- good oral and written communication skills
- an interest in developing a career in a computing related area

16. Methods for Evaluating and Enhancing the Quality and Standards of Teaching and Learning

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

- Student evaluation of individual modules
- Student representation on key committees
- External accreditation of programmes
- Periodic programme reviews
- Annual staff appraisal
- Annual module and programme monitoring reports (includes reviews of progression and achievement statistics)
- External examiners' reports
- Departmental staff acting as external examiners at other institutions
- Double marking and/or moderation of examinations and some assessed coursework
- Industrial links
- Evaluation of graduate destination statistics
- Departmental Director of Learning and Teaching
- Active staff development programme
- QAA Institutional Audit
- Continuous monitoring of student progress and attendance
- Vetting process of examination questions by module team, and external examiners
- External examiners attending Board of Examiners
- External Examiners' reports
- Departmental staff acting as external examiners at other institutions
- Double marking and/or moderation of examinations and some assessed work
- Industrial links
- Evaluation of graduate destination statistics
- Departmental director of learning and teaching
- Module teams
- Programme Teams

Committees with responsibility for monitoring and evaluating quality and standards

- School of Computing Staff/Student liaison committee
- School Learning and Teaching Committee
- School of Computing Undergraduate Board of Studies
- School of Computing Board of Examiners attended by external examiners
- Faculty and University Learning and Teaching Committees
- Faculty Board
- Programme Approval sub-committee of the University Learning and Teaching Board
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Mechanisms for gaining student feedback on the quality of teaching and their learning experience

- National Student Survey
- University Internal Student Surveys
- Student evaluation of individual modules
- School of Computing Staff/Student liaison committee
- Newsgroups
- Anonymous question web pages for some individual modules
- Student programme evaluations
- Informal meetings and social contact with students (including student role in recruitment activities)
- Student representation on department committees
- Student representation on faculty committees
- Student representation on university committees

Staff Development priorities include:

- Staff members have an individual allocation of funds which they may use to develop any of their interests, including those of learning and teaching.
- Newly appointed lecturers, teaching fellows and computing fellows who have no prior teaching experience take part in the University of Kent Postgraduate Certificate in Higher Education qualification
- Staff training of various kinds including appraiser training, interview training, meeting skills, etc.
- Study leave is available at the rate of one term in seven
- Participation in staff development week
- Annual appraisal of staff
- Research group support for research-led teaching
- Research seminars
- Annual away-days that cover a number of staff-related issues
- Module team meetings
- Regular formal and informal collaboration in programme development
- Attendance at relevant industry/business conferences/seminars
- Conference attendance (with or without departmental funding)
- Minimum expected qualifications for appointments to lecturing posts
- Membership of relevant professional/academic bodies
- Widening participation
- Health and safety
- Participation on learning and teaching innovatory projects

17. Indicators of Quality and Standards

- Partial accreditation and exemption (level 1, Professional Project) from the British Computer Society.
- Reports from external examiners
- Degree results and graduate recruitment statistics
- Independent review of the quality of educational provision in the Computing Laboratory by the Higher education Funding Council subject review process achieving an excellent rating.

The following reference points were used in creating these specifications:

- QAA benchmark statement for Computing (2007)
- Requirements of the British Computer Society
- Association of Computing Machinery, Computing Curricula 2001
- Staff research
- University Plan, Learning and Teaching Strategy
- University of Kent Computer Science Programme Specification

Module Learning Outcomes Mapping Matrix
Applied Computing Joint Programmes: Computing AND xxx, xxx AND Computing

ACJH	A1	A2	A3	A4	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D1	D2	D3	D6
Required																			
CO320		X		X	X					X	X	X	X		X			X	X
CO324	X	X	X														X	X	
CO334	X	X	X			X				X						X	X	X	X
CO323		X		X	X			X		X		X	X	X	X			X	X
CO328			X	X	X		X			X		X	X	X	X	X		X	X
CO520		X		X	X				X	X	X	X	X						
CO510		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
One of																			
CO600	O	X	O	X	X	X	X	X	X	X	O	X	X	X	X	X	X	X	X
CO620	O	X	O	X	X	X	X	X	X	O	O	X	X	X	X		X	X	X
Options																			
CO518		X		X	X		X	X			X	X	X						X
CO539		G	G	G	G		G	G	G			G	G	G	G			G	G
CO527	X	X							X			X	X		X		X	X	X
CO639		X			X	X	X	X	X	X	X	X	X	X	X		X	X	X
CO532		X		X	X	X	X					X	X	X				X	X
CO636		X		X	X	X						X				X	X	X	X
CO637		X		X	X						X	X	X					X	X
CO639		X			X	X	X	X	X	X	X	X	X	X	X		X	X	X
CO641	X	X	X	X	X				X		X	X			X		X	X	X
CO643			X	X	X			X	X	X							X		
CO831	X	X	X	X	X	X	X			X		X	X	X	X		X	X	X
CO832		X		X	X		X	X	X		X		X	X	X			X	X

