



Programme Specification Undergraduate

Applicable to all non-clinical undergraduate programmes*

Please click [here](#) for guidance on completing this specification template.

*Excluding Integrated Master's degrees.

Part A: Programme Summary Information

1. Title of programme:	Internet Computing with a Year in Industry		
2. Programme Code:	G503		
3. Entry Award:	Credit:	Level:	
<input type="checkbox"/> BA (Hons)			
<input checked="" type="checkbox"/> BSc (Hons)	480	At least 90 credits at level 6 Year 1: the majority of credit at level 4 Year 2: the majority of credit at level 5	
<input type="checkbox"/> Other (please specify below):	N/A		
<input type="text"/>			
4. Exit Awards:	Credit:	Level:	
<input checked="" type="checkbox"/> Diploma in Higher Education (Dip HE)	240	Year 1: the majority of credit at level 4 Year 2: the majority of credit at level 5	
<input checked="" type="checkbox"/> Certificate in Higher Education (Cert HE)	120	Year 1: the majority of credit at level 4 Year 2: the majority of credit at level 5	
5. Date of first intake:	September 2010 retrospective		
6. Frequency of intake:	Annually, in September/October		
7. Duration and mode of study:	Full-time, 4 years		
8. Applicable framework:	Model for Non-Clinical First Degree Programmes		
Framework exemption	<input checked="" type="checkbox"/>	No (please go to section 9)	

required:

Please indicate the applicable boxes: Yes (please provide a brief summary below)

Date exemption approved by AQSC:

9. Applicable Ordinance:

Ordinance 37 General Ordinance for Undergraduate Degrees
 Ordinance 39 Diploma in Higher Education
 Ordinance 40 Certificate in Higher Education

http://www.liv.ac.uk/commsec/calendar/programme_ordinances.htm

New/revised Ordinance required:

Please indicate the applicable boxes: No (please go to section 10)
 Yes (please provide a brief summary below)

Date new/revised Ordinance approved by Council:

10. Faculty:

11. Level 2 School/Institute:

12. Level 1 unit:

13. Campus:

14. Other contributors from UoL:

15. Teaching other than at UoL:

16. Director of Studies:

17. Board of Studies:

18. Board of Examiners:

19. External Examiner(s):

Name
 Institution
 Position

20. Professional, Statutory or Regulatory body:

21: QAA Subject benchmark Statements(s):	Computing
22. Other reference points:	BCS Course Guidelines and Course Accreditation Criteria
23. Fees:	Standard Science
24. Additional costs to the student:	None
25: AQSC approval:	27 January 2012

Part B: Programme Aims & Objectives

26. Aims of the Programme

The development of the Internet has been the most important innovation in computing since the origins of the field itself. All the evidence suggests that the Internet will continue to grow and evolve for the foreseeable future as the technology becomes increasingly significant. The current, and anticipated growth, in the use of the Internet has been accompanied by a corresponding growth in the demand for graduates with Internet related skills.

No. Aim:

- | | |
|---|---|
| 1 | To address the skills shortage by providing potential students with the necessary knowledge and abilities that will be attractive to future employers. At the same time it will allow students to study an evolving branch of Computer Science that is "pushing" at the boundaries of technology. |
| 2 | To provide students with practical experience of computing within commercial and industrial settings. |

27. Learning Outcomes

No. Learning outcomes – Bachelor’s Honour’s degree

1	Cognitive Abilities
1.1	Systematic and detailed knowledge and understanding of the essential facts, concepts, principles and theories relating to Computer Science in general, and Internet Computing in particular.
1.2	A detailed knowledge of how 1.1 can be used to model and design both traditional and Internet related computer-based systems.
1.3	The capability to recognise and critically analyse criteria and specifications appropriate to problems to be solved by computer, and plan innovative strategies for their solution.
1.4	A systematic knowledge of the criteria and mechanisms whereby traditional and Internet related computer-based systems can be critically evaluated and analysed to determine the extent to which they meet the criteria defined for their current and future development.
1.5	A detailed understanding of the appropriate theory, practices, languages and tools that may be deployed for the specification, design, implementation and evaluation of both traditional and Internet related computer-based systems.
1.6	The ability to give succinct presentations (orally, electronically or in writing) deploying rational and reasoned arguments that address a computational

	problem.
1.7	A systematic understanding of the professional, moral and ethical issues involved in the exploitation of computer technology, and the associated professional, ethical and legal practices.
1.8	A systematic understanding of the field of Internet Computing and related sub-fields.
1.9	A systematic understanding of the world of business where either traditional and Internet related computing technology may be used, including an awareness of financial and economic considerations.
2	Practical Abilities
2.1	Specify, design and construct both traditional and Internet related computer-based systems in a manner that is both innovative and creative.
2.2	Critically evaluate and analyse traditional and Internet related computer-based systems in terms of general quality attributes, possible trade-offs presented within a given problem, risks or safety aspects that may be involved in their operation, and professional, ethical and legal issues.
2.3	Deploy effectively the tools used for the construction and documentation of both traditional and Internet related computer-based systems, with practical emphasis on understanding the whole process involved in the effective deployment of computers to solve practical problems.
2.4	Work as a member of a development team, recognising the different roles within a team and different ways of organising teams.
2.5	Operate computing equipment effectively, taking into account its logical and physical properties.
Learning Outcomes	
No. Learning outcomes – Bachelor’s Non-Honour’s degree	
	<p>By completing Year 3 of the programme, students will have attained the large majority of the outcomes of the Bachelor’s Honours degree programme but will not have attained some outcomes at an appropriate level either as a consequence of passing insufficient module credit or by failing to demonstrate achievement of all learning outcomes specific to the individual project module.</p> <p>Students will have developed an understanding of Computer Science in general and Internet Computing in particular, some of it at the current boundaries of the discipline. Through this, the student will have developed analytical techniques and problem-solving skills that can be applied in many types of discipline related and generic employment. The student will be able to evaluate evidence, arguments and assumptions, to reach sound judgements and to communicate them effectively. Students will have the qualities needed for employment in situations requiring the exercise of personal responsibility, and decision making in complex and unpredictable circumstances. Students will be expected to achieve the majority of the learning outcomes outlined in Section 27.</p>
Learning Outcomes	
No. Learning outcomes – Diploma in Higher Education award	
1	Cognitive Abilities
1.10	Knowledge and understanding of the essential facts, concepts, principles and theories relating to Computer Science in general, and Internet Computing in particular.
1.11	A good knowledge of how 1.10 can be used to model and design both traditional and Internet related computer-based systems.

1.12	A good understanding of how to recognise and critically analyse criteria and specifications appropriate to problems to be solved by computer, and plan innovative strategies for their solution.
1.13	A sound knowledge of the criteria and mechanisms whereby traditional and Internet related computer-based systems can be critically evaluated and analysed to determine the extent to which they meet the criteria defined for their current and future development.
1.14	An appreciation of the appropriate theory, practices, languages and tools that may be deployed for the specification, design, implementation and evaluation of both traditional and Internet related computer-based systems.
1.15	Knowledge of the elements involved in succinct presentations through different media and a good appreciation of rational and reasoned arguments
1.16	A good understanding of the professional, moral and ethical issues involved in the exploitation of computer technology, and the associated professional, ethical and legal practices.
1.17	A good understanding of the field of Internet Computing and related sub-fields.
1.18	An appreciation of the world of business where either traditional and Internet related computing technology may be used, including an awareness of financial and economic considerations.
2	Practical Abilities
2.6	Specify, design and construct both traditional and Internet related computer-based systems in a manner that is both innovative and creative.
2.7	Evaluate and analyse traditional and Internet related computer-based systems in terms of general quality attributes, possible trade-offs presented within a given problem, risks or safety aspects that may be involved in their operation, and professional, ethical and legal issues.
2.8	An appreciation of the tools used for the development and documentation of both traditional and Internet related computer-based systems, with practical emphasis on understanding the whole process involved in the effective deployment of computers to solve practical problems.
2.9	Ability to participate in a development team, recognising the different roles within a team and different ways of organising teams.
2.10	Ability to make effective use of and choice of computing equipment having taken reasoned analysis and account of logical and physical properties.
Learning Outcomes	
No.	Learning outcomes – Certificate in Higher Education award
1	Cognitive Abilities
1.19	Basic knowledge and understanding of the essential facts, concepts, principles and theories relating to Computer Science in general, and Internet Computing in particular.
1.20	Basic knowledge of how 1.19 can be used to model and design both traditional and Internet related computer-based systems.
1.21	A basic understanding of how to recognise and critically analyse criteria and specifications appropriate to problems to be solved by computers.
1.22	Basic knowledge of the criteria and mechanisms whereby traditional and Internet related computer-based systems can be critically evaluated and analysed.
1.23	A basic awareness of the appropriate theory, practices, languages and tools that may be deployed for the specification, design, implementation and evaluation of both traditional and Internet related computer-based systems.

1.24	Basic knowledge of how to present rational and reasoned arguments.
1.25	An understanding of the professional, moral and ethical issues involved in the exploitation of computer technology, and the associated professional, ethical and legal practices.
1.26	A basic understanding of the field of Internet Computing and related sub-fields.
1.27	A basic appreciation of the world of business where either traditional and Internet related computing technology may be used, including an awareness of financial and economic considerations.
2	Practical Abilities
2.11	Basic understanding of how to specify, design and construct both traditional and Internet related computer-based systems in a manner that is both innovative and creative.
2.12	Basic ability to evaluate and analyse traditional and Internet related computer-based systems in terms of general quality attributes.
2.13	A basic understanding of the tools used for the construction and documentation of both traditional and Internet related computer-based systems, with practical emphasis on understanding the whole process involved in the effective deployment of computers.
2.14	The ability to operate computing equipment effectively, taking into account its basic logical and physical properties.

27a. Mapping of learning outcomes:

Learning outcome No.	Module(s) in which this will be delivered	Mode of assessing achievement of learning outcome	PSRB/Subject benchmark statement (if applicable)
1.1	COMP310, COMP315 COMP319 COMP318, COMP324 COMP327 COMP321 COMP395	Written examinations Practical assessments/Written examinations Class tests/Written examination Practical assessments/ Demonstration/ Presentation/Dissertation	
1.2	COMP310, COMP315 COMP319 COMP318, COMP324 COMP327 COMP321 COMP395	Written examinations Practical assessments/Written examinations Class tests/Written examinations Practical assessments/ Demonstration/ Presentation/Dissertation	
1.3	COMP310, COMP315 COMP319	Written examinations	

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	COMP318, COMP327	Practical assessments/Written examinations	
	COMP395	Practical assessments/ Demonstration/ Presentation/Dissertation	
1.4	COMP310, COMP315 COMP319	Written examinations	
	COMP327	Practical assessments/ Written examination	
	COMP395	Practical assessments/ Demonstration/Presentation/ Dissertation	
1.5	COMP310, COMP315 COMP319	Written examinations	
	COMP327	Practical assessments/Written examination	
	COMP395	Practical assessments/Demonstration/ Presentation/Dissertation	
1.6	COMP327	Practical assessments/Written examination	
	COMP395	Practical assessments/ Demonstration/ Presentation/Dissertation	
1.7	COMP299	Reports/Presentation/Overall performance on project work	
	COMP315	Written examination	
	COMP395	Practical assessments/ Demonstration/ Presentation/Dissertation	
1.8	COMP310, COMP315	Written examinations	
	COMP318, COMP324 COMP327	Practical assessments/ Written examinations	
	COMP321	Class tests/Written examination	
	COMP395	Practical assessments/ Demonstration/Presentation/ Dissertation	
1.9	COMP315, COMP319	Written examinations	
	COMP395	Practical assessments/ Demonstration/ Presentation/ Dissertation	

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1.10	<p>COMP201, COMP207 COMP213,</p> <p>COMP211, COMP212 COMP220</p> <p>COMP216</p> <p>COMP281 COMP282</p> <p>COMP299</p>	<p>Practical assessments/ Written examinations</p> <p>Practical assessments/Class test/Written examination</p> <p>Practical assessments/Group reports/Presentation/ Demonstration</p> <p>Practical assessments</p> <p>Reports/Presentation/Overall performance on project work</p>	
1.11	<p>COMP201, COMP207 COMP213</p> <p>COMP211, COMP212 COMP220</p> <p>COMP216</p> <p>COMP281, COMP282</p> <p>COMP299</p>	<p>Practical assessments/Written examinations</p> <p>Practical assessments/Class test/Written examinations</p> <p>Practical assessments/ Group reports/Presentation/ Demonstration</p> <p>Practical assessments</p> <p>Reports/Presentation/Overall performance on project work</p>	
1.12	<p>COMP201, COMP207</p> <p>COMP216</p> <p>COMP220</p> <p>COMP281, COMP282</p>	<p>Practical assessments/ Written examinations</p> <p>Practical assessments/ Group reports/Presentation/ Demonstration</p> <p>Practical assessments/Class test/Written examination</p> <p>Practical assessments</p>	
1.13	<p>COMP201, COMP207 COMP213</p> <p>COMP211, COMP212 COMP220</p> <p>COMP216</p> <p>COMP281, COMP282</p>	<p>Practical assessments/ Written examinations</p> <p>Practical assessments/Class test/Written examinations</p> <p>Practical assessments/ Group reports/Presentation/ Demonstration</p> <p>Practical assessments</p>	

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1.14	COMP201, COMP207 COMP213 COMP211, COMP212 COMP220 COMP216 COMP281, COMP282	Practical assessments/ Written examinations Practical assessments/Class test/Written examinations Practical assessments/ Group reports/Presentation/ Demonstration Practical assessment	
1.15	COMP201, COMP207 COMP213 COMP211, COMP212 COMP216 COMP299	Practical assessments/ Written examinations Practical assessments/Class test/Written examinations Practical assessments/ Group reports/Presentation/ Demonstration Reports/Presentation/Overall performance on project work	
1.16	COMP216 COMP299	Practical assessments/ Group reports/Presentation/ Demonstration Reports/Presentation/Overall performance on project work	
1.17	COMP211, COMP212 COMP216	Practical assessments/Class test/Written examinations Practical assessments/ Group reports/Presentation/ Demonstration	
1.18	COMP216 COMP220 COMP281, COMP282 COMP299	Practical assessments/ Group reports/Presentation/ Demonstration Practical assessments/Class test/Written examination Practical assessments Reports/Presentation/Overall performance on project work	
1.19	COMP101	Practical assessments	

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	COMP102, COMP103 COMP104, COMP106	Practical assessments/ Written examinations	
	COMP108	Practical assessments/Class test/Written examination	
	COMP109	Class tests/Tutorial contributions/Written examination	
	COMP110	Practical assessments/Essays/ Presentation	
	COMP118	Class tests/Written examination	
1.20	COMP101	Practical assessments	
	COMP102, COMP103 COMP104, COMP106	Practical assessments/ Written examinations	
	COMP108	Practical assessments/Class test/Written examination	
1.21	COMP101	Practical assessments	
	COMP104, COMP106	Practical assessments/ Written examinations	
	COMP108	Practical assessments/Class test/Written examination	
1.22	COMP101	Practical assessments	
	COMP102, COMP104 COMP106	Practical assessments/ Written examinations	
	COMP108	Practical assessments/Class test/Written examination	
1.23	COMP101	Practical assessment	
	COMP102, COMP104 COMP106	Practical assessments/Written examinations	
	COMP108	Practical assessments/Class test/Written examination	
	COMP109	Class tests/Tutorial contributions/Written examination	
1.24	COMP101	Practical assessments	

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	COMP102, COMP103 COMP106	Practical assessments/ Written examinations	
	COMP110	Practical assessments/Essays/ Presentation	
1.25	COMP102, COMP104	Practical assessments/ Written examinations	
	COMP110	Practical assessments/ Essays/Presentation	
1.26	COMP104	Practical assessments/ Written examinations	
1.27	COMP110	Practical assessments/Essays/ Presentation	
2.1	COMP318, COMP324 COMP327	Practical assessments/ Written examinations	
	COMP395	Practical assessments/ Demonstration/Presentation/ Dissertation	
2.2	COMP318, COMP324 COMP327	Practical assessments/Written examinations	
	COMP321	Class tests/Written examination	
	COMP395	Practical assessments/ Demonstration/ Presentation/Dissertation	
2.3	COMP318, COMP324 COMP327	Practical assessments/Written examinations	
	COMP321	Class tests/Written examination	
	COMP395	Practical assessments/ Demonstration/Presentation/ Dissertation	
2.4	COMP216	Practical assessments/Group reports/Presentation/ Demonstration	
	COMP299	Reports/Presentation/Overall performance on project work	
2.5	COMP318 COMP324, COMP327	Practical assessments/ Written examination	
	COMP321	Class tests/Written examination	

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	COMP395	Practical assessments/ Demonstration/ Presentation/Dissertation	
2.6	COMP201, COMP207 COMP213 COMP212, COMP220 COMP216 COMP281 COMP282 COMP299	Practical assessments/Written examinations Practical assessments/Class test/Written examinations Practical assessments/Group reports/Presentation/ Demonstration Practical assessments Reports/Presentation/Overall performance on project work	
2.7	COMP201, COMP207 COMP213 COMP211, COMP212 COMP220 COMP216 COMP281, COMP282 COMP299	Practical assessments/ Written examinations Practical assessments/Class tests/Written examinations Practical assessments/Group reports/Presentation/ Demonstration Practical assessments Reports/Presentation/Overall performance on project work	
2.8	COMP201, COMP207 COMP213 COMP211, COMP212 COMP220 COMP216 COMP281, COMP282 COMP299	Practical assessments/Written examinations Practical assessments/Class tests/Written examinations Practical assessments/ Group reports/Presentation/ Demonstration Practical assessments Reports/Presentation/Overall performance on project work	
2.9	COMP216	Practical assessments/ Group reports/Presentation/ Demonstration	

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	COMP299	Reports/Presentation/Overall performance on project work	
2.10	COMP201, COMP207 COMP213	Practical assessments/ Written examinations	
	COMP211, COMP212 COMP220	Practical assessments/Class test/Written examinations	
	COMP216	Practical assessments/Group reports/Presentation/ Demonstration	
	COMP281, COMP282	Practical assessments	
	COMP299	Reports/Presentation/Overall performance on project work	
2.11	COMP101	Practical assessments	
	COMP102, COMP103 COMP104, COMP106	Practical assessments/Written examinations	
	COMP108	Practical assessments/Class test/Written examination	
	COMP118	Class tests/Written examination	
2.12	COMP101	Practical assessments	
	COMP102, COMP103 COMP104, COMP106	Practical assessments/Written examinations	
	COMP108	Practical assessments/Class tests/Written examinations	
	COMP110	Practical assessments/ Essays/Presentation	
2.13	COMP101	Practical assessments	
	COMP102, COMP103 COMP104, COMP106	Practical assessments/Written examinations	
	COMP110	Practical assessments/Essays/ Presentation	
2.14	COMP101	Practical assessments	

	COMP102, COMP103 COMP104, COMP106	Practical assessments/Written examinations	
	COMP108	Practical assessments/Class test/Written examination	
	COMP110	Practical assessments/Essays/Presentation	

28. Skills and Other Attributes

No. Skills and attributes:

1.	Effective information retrieval skills (including use of the WWW and the evaluation of information retrieved from such sources).
2.	A good foundation in basic numeracy.
3.	The ability to use general IT facilities effectively.
4.	The ability to manage their own learning and development, and time management and organisational skills.
5.	An appreciation of the need for continuing professional development in recognition for the need for lifelong learning.
6.	An appreciation of Computer Science practice as an emerging and developing discipline.

28a. Mapping of skills and other attributes:

Skills and other attributes No.	Module(s) in which this will be delivered and assessed	Learning skills, research skills, employability skills	Mode of assessing achievement of the skill or other attribute
1.	COMP101, COMP281 COMP282	Learning skills	Practical assessments
	COMP102, COMP103 COMP104, COMP106 COMP201, COMP207 COMP213, COMP318 COMP324, COMP327		Practical assessments/ Written examinations
	COMP110		Practical assessments/ Essays/Presentation
	COMP211, COMP212 COMP220		Practical assessments/Class test/Written examinations
	COMP216		Practical assessments/ Group reports/ Presentation/Demonstration
	COMP299		Reports/Presentation/ Overall performance on project work

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	COMP321		Class tests/Written examination
	COMP395		Practical assessments/ Demonstration/ Presentation/Dissertation
2.	COMP102, COMP207 COMP327	Employability skills	Practical assessments/ Written examinations
	COMP108		Practical assessments/Class test/Written examination
	COMP109		Class tests/Tutorial contributions/Written examination
	COMP118		Class tests/Written examination
	COMP299		Reports/Presentation/Overall performance on project work
	COMP310, COMP315		Written examinations
3.	COMP101, COMP281 COMP282	Employability skills	Practical assessments
	COMP102, COMP103 COMP104, COMP106 COMP201, COMP207 COMP213, COMP318 COMP324, COMP327		Practical assessments/ Written examinations
	COMP110		Practical assessments/Essays/ Presentation
	COMP211, COMP212 COMP220		Practical assessments/Class test/Written examinations
	COMP216		Practical assessments/Group reports/Presentation/Demonstr ation
	COMP299		Reports/Presentation/Overall performance on project work
	COMP321		Class tests/Written examination
	COMP395		Practical assessments/ Demonstration/ Presentation/Dissertation
4.	COMP101, COMP281 COMP282	Employability skills	Practical assessments

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	<p>COMP102, COMP103 COMP104, COMP106 COMP201, COMP207 COMP213, COMP318 COMP324, COMP327</p> <p>COMP108, COMP211 COMP212, COMP220</p> <p>COMP109</p> <p>COMP110</p> <p>COMP118, COMP321</p> <p>COMP216</p> <p>COMP299</p> <p>COMP310, COMP315 COMP319 COMP395</p>		<p>Practical assessments/Written examinations</p> <p>Practical assessments/Class tests/Written examinations</p> <p>Class tests/Tutorial contributions/Written examination</p> <p>Practical assessments/Essays/Presentation</p> <p>Class tests/Written examinations</p> <p>Practical assessments/Group reports/Presentation/Demonstration</p> <p>Reports/Presentation/Overall performance on project work</p> <p>Written examinations</p> <p>Practical assessments/Demonstration/Presentation/Dissertation</p>
5.	<p>COMP101</p> <p>COMP110</p> <p>COMP201, COMP207 COMP213, COMP318 COMP327</p> <p>COMP212</p> <p>COMP216</p> <p>COMP299</p> <p>COMP315</p>	Employability Skills	<p>Practical assessments</p> <p>Practical assessments/Essays/Presentation</p> <p>Practical assessments/Written examinations</p> <p>Practical assessments/Class tests/Written examination</p> <p>Practical assessments/Group reports/Presentation/Demonstration</p> <p>Reports/Presentation/Overall performance on project work</p> <p>Written examination</p>

	COMP395		Practical assessments/ Demonstration/Presentation/ Dissertation
6.	COMP207, COMP318 COMP324, COMP327	Research Skills	Practical assessments/Written examinations
	COMP310, COMP315 COMP319		Written examinations
	COMP321		Class tests/Written examination
	COMP395		Practical assessments/Demonstration/ Presentation/Dissertation

29. Career opportunities:

The programme is directed at all career opportunities within the general domain of computer science and the Internet based computing industry in particular.

Part C: Entrance Requirements

30. Academic Requirements:

The typical offer for entrance to degree programmes in the Department of Computer Science is three subjects at GCE A level with grades AAB or better. We give a one grade bonus (ABB) for the inclusion of one or more mathematical subjects (Mathematics, Further Mathematics, Pure Mathematics, Computing/Computer Science, and Physics) included in these three subjects. All students are also expected to have GCSE English Language at grade C or better and GCSE Mathematics at grade C or better.

A wide range of other UK and International qualifications are also accepted.

Overseas qualifications are considered using NARIC to verify O/S qualifications and standards. Candidates from non-English speaking countries are expected to have IELTS ≥ 6.0 with minimum 5.5 in each component (other English Language Tests are also accepted, see <http://www.liv.ac.uk/study/international/countries/english-language.htm#ug> for details).

31. Work experience:

It is University Policy to encourage mature entry. Each case is considered on merit, but in such cases work experience is taken into account.

32. Other requirements:

None

Part D: Programme Structure

33. Programme Structure:

Students are expected to pursue the following programme of study
(`•' indicates a required module, `+' indicates a mandatory module)

YEAR 1						
Module Code	Module Title	Credit Value	Level	Co-requisite	Pre-requisites	Pre-requisite for*
Semester 1						
COMP101	Introduction to Programming in Java (•)	15	4	-	-	COMP102 COMP103 COMP104 COMP106 COMP201 COMP207 COMP208 COMP213
COMP103	Computer Systems (•)	15	4	COMP101	-	Number of second year modules
COMP109	Foundations of Computer Science (•)	15	4	COMP101 COMP103	-	COMP108 COMP118 COMP202 COMP218
Semester 1 and 2						
COMP110	Professional Skills in Computer Science (+)	7.5	4	-	-	-
COMP102	Introduction to Databases (•)	15	4	COMP101	-	COMP207 COMP208
Semester 2						
COMP104	Operating System Concepts (•)	15	4	-	COMP101 COMP103	-
COMP106	Human-Centric Computing (•)	15	4	-	COMP101	-
COMP108	Algorithmic Foundations (•)	15	4	-	COMP109	COMP218 COMP202
COMP118	Logic in Computer Science (•)	7.5	4	-	COMP109	COMP219 COMP304 COMP313 COMP321

*May also be a pre-requisite for modules on other programmes

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YEAR 2						
Module Code	Module Title	Credit Value	Level	Co-requisites	Pre-requisites	Pre-requisite for*
Semester 1						
COMP201	Software Engineering I (•)	15	5	-	COMP101 COMP102	COMP216
COMP207	Database Development (•)	15	5	-	COMP101 COMP102	-
COMP211	Internet Principles (+)	15	5	-	-	-
COMP213	Advanced Object Oriented Programming (•)	15	5	-	COMP101	-
Semester 2						
COMP212	Distributed Systems (•)	15	5	-	COMP101	-
COMP216	Internet Computing Group Project (+)	15	5	-	COMP101 COMP102 COMP104 COMP106 COMP108 COMP110 COMP201 COMP207 COMP211 COMP213	Final Year Project
COMP220	Software Development Tools (•)	15	5	-	COMP101 COMP201	-
COMP281	Principles of C and Memory Management (•)	7.5	5	-	COMP213	COMP282 COMP327
COMP282	Advanced Object Oriented C Languages (•)	7.5	5	-	COMP281	COMP327
YEAR 3						
Module Code	Module Title	Credit Value	Level	Semester	Pre-requisites	Pre-requisite for*
COMP299	Industrial Placement Year 3	120	5	1+2	COMP110 COMP102, COMP104, COMP110 or equivalents; COMP106 and COMP108 recommended	-
*May also be a pre-requisite for modules on other programmes						

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YEAR 4						
Module Code	Module Title	Credit Value	Level	Co-requisite	Pre-requisites	Pre-requisite for
Semester 1 and 2						
COMP395	Honours Year Internet Computing Project (+)	30	6	-	COMP101 COMP102 COMP104 COMP110 or equivalents COMP106 COMP108 recommended	-
Semester 1						
COMP319	Software Engineering II (•)	15	6	-	COMP201	-
COMP321	Ontology Languages and their Applications (•)	15	6	-	COMP109 and COMP118 or equivalents; or COMP219	-
COMP327	Mobile Computing (•)	15	6	-	COMP106 COMP281 COMP282	-
Semester 2						
COMP310	Multi-Agent Systems (•)	15	6	-	-	-
COMP318	Advanced Web Technologies (•)	15	6	-	-	-
<i>Plus options totalling 15 credits from the following two modules provided pre-requisites are satisfied</i>						
COMP315	Technologies for E-Commerce	15	6	-	COMP207	-
COMP324	Complex Information and Social Networks	15	6	-	-	-
<p>Note: in exceptional circumstances, and with the approval of the programme Director of Studies, alternative modules may be substituted for non-mandatory modules.</p>						

34. Industrial placement/work placement/year abroad:

Year 3 will take place in an appropriate industrial computing environment, e.g. software development company, computer-support divisions within a commercial business, etc. Students will be assisted in finding a suitable placement, but no placement can be guaranteed. All such placements and the programme of work to be carried out as part of such, need to be approved by the Director of Studies. Each student is allocated an academic supervisor who provides a contact point for the student within the University. The supervisor will formally contact the student on two occasions during the placement in order to discuss the student's progress. The contact will typically consist of a visit or Skype video conference. The supervisor is also available to assist the student with any queries through the year in industry.

35. Liaison between the Level 2 Schools/Institutes involved:

N/A

Part E: Learning, Teaching And Assessment Strategies**36. Learning, Teaching and Assessment Strategies:**

The programme complies with:

- a. University of Liverpool Policy on Standards and Quality in Learning and Teaching
- b. University of Liverpool Learning and Study Skills Strategy
- c. University of Liverpool Code of Practice on Assessment
(all at http://www.liv.ac.uk/tqsd/pol_strat_cop/index.htm)
- d. Department of Computer Science Learning and Teaching Strategy:
<http://www.csc.liv.ac.uk/department/LTAS.html>

The Department has made use of techniques associated with e-learning for many years. In this programme (as in all others), lecture material, additional reading material, assignments, model solutions and feedback are all made available online. In addition, some modules have experimented with online provision of video-recorded lectures, electronic discussion forums and teaching software. Continually assessed work is often submitted electronically, allowing plagiarism detection to be performed automatically, and reports on such work may be returned in a similar fashion. A computer-based system is also used for all attendance monitoring at lectures and tutorials.

36a. Learning, Teaching and Assessment methods:

The programme is delivered through a mixture of formal lectures, practical and tutorial sessions, guided reading, student centred learning, and project work. The programme operates under the approved teaching and learning strategy of the Department of Computer Science.

The programme is assessed by a combination of traditional written examinations and continuous assessment, including marked essays and computer programming problems. In more detail, modules in the Computer Science programme are assessed as follows (according to the nature of the module):

- i. Examination only where the assessment is based entirely on examination, which is held at the end of the semester in which the module is taught.
- ii. Continuous Assessment.
- iii. Examination and continuous assessment.

The second year group project and the honours year project include elements of assessment by oral, poster and demonstration representation of project work. The mark produced for a module is subject to scrutiny by the Computer Science Undergraduate Boards of Examiners including the External Examiner for this programme. Decisions on progress are also controlled by the university's published regulations.

The Department currently does not conduct any "viva voce" examinations.

Details of the assessment method for each module can be obtained from the Department of Computer Science Student Handbook. For information on adjustments to examination arrangements for disabled students see *Appendix K* of the University Code of Practice on Assessment.

37. Assessment information for students:

Code of Practice on Assessment

The University has a Code of Practice on Assessment which brings together the main institutional policies and rules on assessment. The Code is an authoritative statement of the philosophy and principles underlying all assessment activities and of the University's expectations in relation to how academic subjects design, implement and review assessment strategies for all taught programmes of study.

The Code of Practice includes a number of Appendices which provide more detail on the regulations and rules that govern assessment activity; these include:

- The University marks scale, marking descriptors and qualification descriptors;
- The model for non-clinical first degree programmes;
- The system for classifying three-year, non-clinical, undergraduate degrees;
- The system for classifying four-year, non-clinical, undergraduate degrees that include a year in industry or a year abroad;
- Information about students' progress, including guidance for students;
- The procedure for assessment appeals;
- Regulations for the conduct of exams;
- The University's policy on making adjustments to exam arrangements for disabled students.
- The code of practice relating to external examining (see also below)
- The Academic Integrity Policy, which covers matters such as plagiarism and collusion and includes guidance for students;
- The policy relating to mitigating circumstances which explains what you should do if you have mitigating circumstances that have affected assessment; and
- The policy on providing students with feedback on assessment.

Please click [here](#) to access the Code of Practice on Assessment and its appendices; this link will also give you access to assessment information that is specific to your cohort:

A summary of key assessment information is also available in the 'Your University' handbook.

Marking Criteria:

Marking on level 4, 5 and 6 modules offered by the Department of Computer Science is carried out using the following marking descriptors:

	For practical exercises and projects	For exercises, presentations, projects, and written examinations:
90-100%	Displays an <i>exceptional</i> degree of originality and creativity and/or <i>exceptional</i> analytical and	Shows <i>critical</i> understanding of current knowledge. For level 6 this should include relevant recent research papers.

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	problem solving skills. Solution must have novel aspects. The methodology employed is well-developed and correct.	Perceptive, focused treatment of all issues/questions presented in a critical and scholarly way.
80-89%	Displays a level of originality and creativity and/or the ability to suggest realistic solutions to novel problems. The methodology employed is well-developed and correct.	Evidence of wide reading. For level 6 this should include relevant research papers and books. Perceptive, focused treatment of all issues/questions presented in a critical and scholarly way.
70-79%	Demonstrates ability to analyse, interpret and organise information to produce coherent accounts or solve complex problems. All aspects of a suitable methodology evident and used correctly.	Comprehensive knowledge and understanding of the subject together with the ability to put the work into context and to critically evaluate selected aspects of the work. Arguments/answers will be clear, competently structured, and accurate.
60-69%	Demonstrates ability to analyse, interpret and organise information to produce coherent accounts or solve relatively complex problems. Use of a suitable methodology evident and used correctly, with minor omissions.	Good knowledge and understanding of the subject, with no major gaps or omissions, but minor gaps or omissions may occur. Arguments/answers will be clear, competently structured, and largely accurate.
50-59%	Displays ability to analyse, interpret and organise information to produce coherent accounts or solve well-defined problems of some scope. Most aspects of a suitable methodology evident and used correctly, some omissions occur but without negative impact on the result of the work.	Satisfactory knowledge and understanding of the essentials of the subject, with an ability to integrate information into a clear, well-structured account, but lacking in breadth or depth, or with some significant aspects omitted. Arguments/answers must be clear, although they may not be well-developed or reflect a wider appreciation of the subject. Some errors and omissions are likely to be present.
40-49%	Demonstrates an ability to solve limited, well-defined problems of a familiar type. Most aspects of a suitable methodology evident, but minor flaws in its use or omissions with some negative impact on the result of the work.	General knowledge and understanding of the subject but very limited in depth or breadth. Arguments/answers are likely to be somewhat lacking in structure. There are likely to be errors and omissions and the evidence provided to support arguments will be very limited.
35-39%	Fails to demonstrate an ability to solve limited, well-defined, problems of a	Knowledge and understanding of the subject are fragmentary, some aspects showing a very

	familiar type. Aspects of a suitable methodology evident, but flaws in its use or omissions which negatively impact on the result of the work.	basic level of understanding but other aspects displaying fundamental errors. Arguments/answers are lacking in structure. There are errors and omissions and the evidence provided to support arguments is very limited.
30-34%	Fails to demonstrate an ability to solve simple, well-defined problems of a familiar type. Lack of the use of a suitable methodology or flaws in its use which negatively impact on the result of the work.	Knowledge and understanding of the subject are fragmentary, with an insufficient number of aspects showing a very basic level of understanding and too many aspects displaying fundamental errors and omissions. Arguments/answers are lacking in structure. There are errors and omissions and the evidence provided to support arguments is very limited.
20-29%	Fails to demonstrate an ability to solve simple, well-defined, problems of a familiar type under guidance. Serious lack of the use of a suitable methodology or flaws in its use which negatively impact on the result of the work.	Very limited range of knowledge with many important gaps and omissions. Shows incomplete understanding with numerous errors of interpretation. Arguments/ answers have little structure, contain serious errors, and there is no support for arguments.
10-19%	Little evidence of the use of a suitable methodology.	Shows only the most limited and fragmentary knowledge of the subject with little or no understanding of essential principles and concepts. Work is likely to be unstructured and ill-presented. Arguments/ answers are only loosely related to issues/questions or only cover a seriously inadequate part of the issues/questions.
0-9%	No evidence of the use of a suitable methodology.	Virtually devoid of any evidence of knowledge or understanding of the subject. No or almost no arguments/answers.

38. Student representation and feedback:

Student representation and feedback are facilitated through:

1. The University Academic Advisor scheme.
2. The Department's Staff-Student Liaison Committee (which operates in accordance with the University's code of practice on student representation).

<p>3. Module questionnaires completed by students at the end of each taught module.</p> <p>4. Programme questionnaires completed by students at the end of each year of study.</p> <p>Full details can be found in the Department of Computer Science Student Handbook.</p>

Part F: Status Of Professional, Statutory Or Regulatory Body Accreditation

39. Status of Professional, Statutory or Regulatory Body Accreditation:

The programme is accredited to 2019 by BCS, the Chartered Institute for IT for the purposes of fully meeting the academic requirement for registration as Chartered IT Professional and partially meeting the academic requirement for a Chartered Engineer and as Chartered Scientist.

The programme has also been awarded the Euro-Inf Bachelor Quality Label by BCS, The Chartered Institute for IT, for intakes 2015-2019.

Part G: Diversity & Equality Of Opportunity And Widening Participation

40. Diversity & Equality of Opportunity and Widening Participation:

The programme design, structure and content are consistent and compliant with the University's Diversity and Equality of Opportunity Policy.

Annex 1

Annex of Modifications Made to the Programme

Please complete the table below to record modifications made to the programme.

Description of modification (please include details of any student consultation undertaken or confirm that students' consent was obtained where this was required)	Minor or major modifications	Date approved by FAQSC	Date approved by AQSC (if applicable)	Cohort affected
<p>Apr 2011: Changes to programme structure for 2011-12:</p> <ul style="list-style-type: none"> Addition of modules: COMP104 (required/optional), COMP118 (required), COMP281 (required), COMP282 (required), 	Minor			

<p>COMP324 (optional).</p> <ul style="list-style-type: none"> • Removal of modules: COMP112, COMP114, COMP204 (replaced by COMP104). <p>The Computer Science Staff-Student Liaison Committee was presented with draft versions of the new programme structures for all undergraduate programmes and a number of issues relating to the introduction of new modules in years 1 to 3 and the withdrawal of some year 1 modules have been discussed.</p> <p>The intended changes to the curriculum were also presented to our Industrial Liaison Committee at a meeting in January 2011. The proposals, in particular, the introduction of 'Technical Skills' modules (COMP281-282), were positively received.</p>				
<p>Nov 2011: Amendment to entry requirements</p>	<p>Minor</p>			