

Course Information Form

This Course Information Form provides the definitive record of the designated course

General Course Information

Course Title	Computer Networking Computer Networking (with Professional Practice Year)
Qualification	BSc (Hons)
FHEQ Level	6
Intermediate Qualification(s)	None
Awarding Institution	University of Bedfordshire
Location of Delivery	AA – University Square Campus
Mode(s) of Study and Duration	Full-time over 3 years Full-time with Professional Practice Year over 4 years Part-time pathway typically over 6 years
Professional, Statutory or Regulatory Body (PSRB) accreditation or endorsement	Accredited by BCS
UCAS Course Code	G420
External Benchmarking	QAA Subject Benchmark Statement Computing (2016) QAA FHEQ level descriptors (2014)
Entry Month(s)	October and February

Why study this course

Computer networks have become part of our everyday lives - they form the backbone of modern information systems. As networks expand, there is a growing need for individuals who understand their practical benefits, as well as how to implement and manage them.

This course focuses on the technical aspects of network design, network installation and configuration, systems administration, maintenance and management, as well as how they can be applied in modern technologies. By studying this course, you'll develop the required skills to implement computer network infrastructures in all sectors of the community. Emphasis is placed on the development of strong technical skills in combination with the management of networks, implemented through design, and managing the needs of clients and businesses.

Educational Aims

This course shares a common first stage with our other BSc degrees in Computer Science to give you a foundation, as well as providing a platform for specialist study in the second and third stages. It emphasises the skills needed to design, implement, maintain and manage networks and gives a solid grounding in core computing and information systems. The course is employment focussed with a balance of theory and practice. The course provides the preparation for a number of industry standard professional certification programmes.

Course Structure

The Units which make up the course (including the Professional Practice Year as applicable) are:

Unit Code	Level	Credits	Unit Name	Core or option
NEWCIS003-1	4	30	Mathematics and Concepts for Computational Thinking	Core
NEWCIS022-1	4	30	Principles of Information Security	Core
NEWCIS023-1	4	30	Databases and Computer Networks	Core
NEWCIS013-1	4	30	Principles of Programming and Data Structures	Core
CIS015-2	5	30	Networking	Core
NEWCIS026-2	5	30	Information Security Management and Emerging Technologies	Core
NEWCIS027-2	5	30	Network Programming	Option
CIS022-2	5	30	Wireless communications and networking	Option
NEWCIS029-2	5	30	Switching and Routing	Core
CIS097-2	5	0	Professional Practice Year (Computer Science and Technology)	Option
CIS005-3	6	30	Advanced Networking	Core
NEWCIS010-3	6	30	Agile Project Management	Core
NEWCIS031-3	6	60	Undergraduate Project in Networking	Core

Course-Specific Regulations

No

Entry requirements

University of Bedfordshire standard entry requirements apply.

Additional Course Costs

None

Graduate Impact Statements

The course has been designed to develop graduates who are able to:

- Demonstrate advanced understanding of concepts and technologies within the core area of Computer Networking such as Network protocols, Network design, Network modelling and performance analysis, Network Management, Network Security, Programming and troubleshooting
- Contribute specialist expertise productively to a multi-specialist development team working from Network design to implementation, deployment, management and performance analysis
- Learn and use new ideas and techniques as they appear within an evolving industry

Course Learning Outcomes

1. Demonstrate knowledge and skills related to the foundations of computer systems
2. Analyse and evaluate network designs and problems in a range of contexts and to choose and implement appropriate solutions
3. Demonstrate skills that allow them to develop and implement computer networks
4. Demonstrate skills in project management in relation to the delivery of projects within the constraints of client critical success factors
5. Express, interpret and critically evaluate issues concerning the law and professional ethics in the context of network systems
6. Demonstrate investigative skills in the area of computer networking through completion of substantial assignments, presentations and case studies
7. Apply skills in rational argument, objective interpretation of evidence, judgement, decision making and planning and analysis of complex computer network management problems
8. Communicate your ideas both in writing and orally according to appropriate academic or professional standards
9. Evaluate when and why you need information, find it, use and communicate it in an ethical manner.
10. Research and evaluate information from a number of sources.

In order to qualify for the award of BSc (Hons) Computer Networking (with Professional Practice year) students will need to meet all of the outcomes above and:

11. Demonstrate knowledge and analytical understanding of professional practice by successfully completing an approved period of approved work place practice.

PSRB details

This course is accredited by the BCS – Chartered Institute for IT to meet the requirements for registration as a Chartered IT Professional (CITP). Details of the requirements and skills are available within the CITP standard: <https://www.bcs.org/media/1062/chartered-it-professional-standard.pdf>

Learning and Teaching

The course structure across levels is implemented as follows:

The first year will cover the fundamentals of the Computer Science by encompassing the topics of Programming, Modelling, Software Engineering, Databases, Networking. The focus is placed on establishing problem solving processes based on a computational thinking. In addition, the professional development of the students is fostered within Term 1 of the unit Fundamentals of Computer Science.

The second year is comprised of specialised core-units that deepen the knowledge, understanding and application of the first year.

The final year devotes 60 credits to the honours project. While the undergraduate project relates to the student working as an individual the 30 credit unit Agile Project Management addresses student interaction within a professional environment. The students have to work in a group and make decisions within professionally arranged project meetings.

Assessment

You are assessed in a variety of ways.

The majority of units are assessed through coursework, group and individual projects, portfolios, essays, presentations or exams. As part of project, you will also produce artefacts in the area of your specialism. Constant feedback and advice from a supervisory or unit team will be provided to support you in your work.

At level 4 you are assessed on your understanding of the fundamental concepts of Computer Networking and its application. You are required to comprehend the basic range of intellectual concepts which form the foundations of the subject and application area, and will be assessed on your ability to articulate such concepts in a coherent manner, in a variety of written assessments/written briefs.

At level 5 you are assessed on your ability to apply the basic concepts of the disciplines introduced in level 4 to existing controversies and issues on which there is already a body of research and critical opinion. You also should be able to demonstrate the inter-relationships between critical theory and practice.

At level 6 you will be required to demonstrate independent thinking and initiative. This may be in the form of analysing and criticising current approaches and theory within Computer Networking. In all cases, you will be expected to show an awareness of the major theories and practices of the discipline. You will progress from well-defined briefs to more open-ended and challenging assessments, which culminate in the honours project – where you will be given freedom to choose your area of work.

Assessment Map –
A = Submission Deadline; F = Feedback given

Unit Code	C/O	Semester 1															Semester 2														
		4	5	6	7	8	9	10	11	12	13	14	15	18	4/19	5/20	6/21	7/22	8/23	9/24	10/25	11/26	12/27	13/28	14/29	15/30	18/33				
NEW CIS02 2-1	C							W R-G R		P R-O R	F			F																	
NEW CIS00 3-1	C			IT-P T			F						P J-A R T	F																	
NEW CIS02 3-1	C																IT-P T									C B-E X					
NEW CIS01 3-1	C																		IT-P T		F			P J-A R T			F				
CIS01 5-2	C									W R-I			F/E X	F																	
NEW CIS02 6-2	C							W R-I			F	P J-A R T	F																		
NEW CIS02 7-2	O																		IT-P T		F			P J-A R T			F				
CIS02 2-2	O																	W R-G R		F					E X	F					
NEW CIS02 9-2	C																				IT-P T		F	P R-O T		F					
CIS09 7-2	O	Three weeks after completion of work experience; feedback within 20 working days.																													
CIS00 5-3	C									W R-I			F/E X	F																	
NEW CIS01 0-3	C																				P R-O R			F	P J-A	F					

Developing your employability

Employability is understood widely as encompassing knowledge, skills and a professional attitude which your tutors expect you to display in all your units. All University of Bedfordshire courses aim to help you to be prepared for the world of work. The Careers Service is there to support you throughout the three years of your study. Our curriculum gives you skills that are valuable for a career within Computer Networking but it is also relevant for a much wider range of applications.

The final year unit 'Agile Project Management' in particular requires you to work in a team so as to apply a current project management methodology that embraces all of these knowledge areas in an integrated way while going through the stages of planning, execution and project control; you will work as part of a team, take responsibility and make autonomous decisions that impact on the project team performance.

In addition and somewhat complementary the honours project fosters independent and autonomous study: you learn to take up the responsibility of conducting your project, typically derived from your own ideas, in collaboration with a dedicated member of the teaching staff as project supervisor.

Students who register for the degree with professional practice year will additionally attend a series of workshops and activities related to securing a suitable placement and compulsory briefings at the end of year 2 to ensure that all legal requirements for health and safety, safeguarding etc. training have been met,. This will be explained more fully in your professional practice handbook once you have registered with the Careers and Employability Service's Student Development and Awards Team in your first year. If you will be working with children and/or vulnerable people you will be required to have a DBS check and undertake Safeguarding and Prevent training.

After Graduation

Career:

Graduates of this degree should be able to go into any of the following positions

- Helpdesk and Network Support
- Network Security Specialists
- Network/Systems Engineering
- Systems/Internet/Network Administration
- Network/Information Systems Managers
- Project Management

and many other computing related positions

Further study:

MSc in Computer Networking, Mobile Networking, Security, Computer Science or any other related topic; MPhil / PhD.

Additional Information

Several units allow students to use work and feedback from the first assessment to perform best in the second.

All units benefit from weekly practical sessions or supervisor meetings that provide a constant learner-teacher interaction process which also serves to reflect on learning styles.

The honours project includes a 'contextual report' which is formative in nature and provides an opportunity of structured feedback on the approach taken by the students for their honours project.

Student Support during the course

At institutional level, the university has in place a range of easily accessible support structures for new and existing students.

The Student Information Desk (SiD, <http://beds.ac.uk/sid>) offers confidential advice on all aspects of academic study. It provides information about other areas of university-wide student support such as extenuating circumstances, housing, health, counselling, study support, special needs and disability advice, and careers service. The Study Hub provides workshops and one to one support for academic skills.

The university chaplaincy runs regular meetings, social events and trips. The Student Union provides additional support and activities.

Course specific support is also in place. First year students receive a comprehensive induction in the week prior to the commencement of the academic year. In addition to this, course co-ordinators will meet with their student groups to explain the course structure and other issues relating to the student experience. These introductions will give you outlines of your course and units, a description of the ways you will be encouraged to develop your knowledge and skills, and signpost resources and materials to assist the process of your learning and success. An important part of this induction is the training to use BREO (Bedfordshire Resources for Education Online). BREO is your personalized virtual learning environment that contains lecture notes, links for online assignment submissions, staff contact details, links to central student services and much more. We expect that you use BREO regularly, and that you use your university email where we send you updates about all aspects of your course which need your attention.

All students will be allocated a personal tutor when they join the course. This academic will be responsible of monitoring your academic progress throughout your first year and beyond, and will help you with any academic or personal issues that might come up. The personal tutor is your consistent point of contact for support and guidance, but will on occasion refer you to other university staff for specific issues.

Further support is provided by lecturers who have office hours and by the course administration team.

Students may be required, at the discretion of the course coordinator, to undergo diagnostic testing for academic English language abilities, and may further be required, at the course coordinator's discretion, to participate in academic English support workshops or classes laid on by the University.

Our PAL (Peer Assisted Learning) scheme will provide additional support to new students from students at levels 5 and 6.

Course Equality Impact Assessment

Question	Y/N	Anticipatory adjustments/actions
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Is the promotion of the course open and inclusive in terms of language, images and location?	Y	
Are there any aspects of the curriculum that might present difficulties for disabled students? For example, skills and practical tests, use of equipment, use of e-learning, placements, field trips etc.	Y	This course makes intensive use of computing equipment (desktop or laptop computers) and so if you have difficulty accessing these you should discuss this with the Disability Advice Team in conjunction with the course team at the outset to ensure that appropriate support is in place.
Are there any elements of the content of the course that might have an adverse impact on any of the other groups with protected characteristics?	N	
If the admission process involves interviews, performances or portfolios how have you demonstrated fairness and avoid practices that could lead to unlawful discrimination?	N/A	
Have you framed the course learning outcomes and Graduate Impact Statements in a non-discriminatory way?	Y	
Does the course handbook make appropriate reference to the support of disabled students?	Y	

Administrative Information – Faculty completion	
Faculty	Creative Arts, Technologies and Science
Portfolio	Undergraduate Computing and Engineering
Department/School	Computer Science and Technology
Course Coordinator	Ghazanfar Ali Safdar
Semester pattern of operation	Oct (Semester 1), Feb (Semester 2)
PSRB renewal date (where recognised)	09/2023
Version number	1/19
Approved by (c.f. Quality Handbook ch.2)	University approval event
Date of approval (dd/mm/yyyy)	25/06/2019

Implementation start-date of this version (plus any identified end-date)	TBC
Study model type if not on-campus	On-campus

	Name	Date
Form completed by	Renxi Qiu / Marc Conrad	
Signature of Chair of Faculty TQSC <i>to confirm the accuracy of information presented</i>		

Course Updates – ensure that the revised CIF is given a new version number each time a change is made		
Date	Nature of Update	FTQSC Minute Ref:

Administrative Information – Academic Registry completion	
Route code (post approval)	
JACS / HECoS code (KIS)	<i>100365</i>
SLC code (post approval)	
Qualification aim (based on HESA coding framework)	



Annexes to the Course Information Form

*These annexes will be used as part of the approval and review process and **peer academics** are the target audience.*

General course information

Course Title	<i>As stated in the course information section of the associated CIF</i>
Qualification	<i>As stated in the course information section of the associated CIF</i>
Route Code (SITS)	
Faculty	<i>As stated in the administrative section of the associated CIF</i>
Department/School	<i>As stated in the administrative section of the associated CIF</i>
Version Number	<i>This should be the same as that stated in the administrative section of the associated CIF</i>

Annex A: Course mapping of unit learning outcomes to course learning outcomes

Unit code	NEW CIS0 22-1	NEW CIS0 03-1	NEW CIS0 23-1	NEW CIS0 13-1	CIS 015 -2	NE WCI S02 6-2	NEW CIS0 27-2	CIS 022 -2	NEW CIS0 29-2	CIS09 7-2	CIS 005 -3	NEW CIS0 10-3	NEW CIS0 31-3			
Level	4	4	4	4	5	5	5	5	5	5	6	6	6			
Credits	30	30	30	30	30	30	30	30	30	0	30	30	60			
Core or option	C	C	C	C	C	C	O	O	C	O	C	C	C			
Course Learning Outcome (number)	<i>Insert LO1 and/or LO2 for each unit into cell corresponding to the course learning outcome</i>															
1	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2		1,2	2	1,2			
2	1,2		1,2	1,2	1,2	1,2	1,2	1,2	1,2		1,2		1,2			
3						1,2	1,2	1,2	1,2		1,2	1,2	1,2			
4						1,2	1,2	1,2	1,2		1,2	1,2	1,2			
5	1,2	1,2	1,2	1,2	1,2	1,2					1,2	1,2	1,2			
6	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2		1,2	1,2	1,2			
7	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2		1,2	1,2	1,2			
8	1,2	2	1,2	1,2	1,2	1,2	1,2	1,2	1,2		1,2	1,2	1,2			
9	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2		1,2	1,2	1,2			
10	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2		1,2	1,2	1,2			
11										1,2						

Annex B: Named exit or target intermediate qualifications

This annex should be used when Schools wish to offer intermediate qualifications which sit under the main course qualification as named exit or target awards, rather than unnamed exit/default awards.

Section 1: General course information

Intermediate Qualification(s) and titles	<i>Not applicable</i>
Mode(s) of Study and Duration	
Type of Intermediate Qualification(s)	
Route Code(s) (SITS) of Intermediate Qualification(s)	

Section 2: Qualification unit diet

One table to be used for each intermediate qualification

Confirmation of unit diet for:	<i>Not applicable</i>
The units to achieve the credits required may be taken from any on the overall diet for the main course qualification	
A combination of units from a restricted list must be taken to achieve the credits required (specify the list below)	
A specific set of units must be taken to achieve the credits required (specify units below)	

List of units (if applicable):-

Section 3: Course structure and learning outcomes

One table to be used for each intermediate qualification

Intermediate qualification and title					Not applicable			
The Units which make up this course are:					Contributing towards the <i>Insert LO1 and/or LO2 for</i> <i>course learning outcomes</i>			
Unit Code	Level	Credits	Unit Name	Core or option	1	2	3	4

Annex C: Course mapping to FHEQ level descriptor, subject benchmark(s) and professional body or other external reference points

One set of mapping tables to be produced for the course and each named intermediate qualification

Course (or intermediate) qualification and title	BSC (Hons) Computer Networking
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FHEQ Descriptor for a higher education qualification	QAA FHEQ level descriptors; October 2014	Course Learning Outcome(s)												
		1	2	3	4	5	6	7	8	9	10	11		
A systematic understanding of key aspects of their field of study, including acquisition of coherent and detailed knowledge, at least some of which is at, or informed by, the forefront of defined aspects of a discipline.		X												
An ability to deploy accurately established techniques of analysis and enquiry within a discipline			X				X							
Conceptual understanding that enables the student: <ul style="list-style-type: none"> to devise and sustain arguments, and/or to solve problems, using ideas and techniques, some of which are at the forefront of a discipline to describe and comment upon particular aspects of current research, or equivalent advanced scholarship, in the discipline 		X												
An appreciation of the uncertainty, ambiguity and limits of knowledge					X									
The ability to manage their own learning, and to make use of scholarly reviews and primary sources (for example, refereed research articles and/or original materials appropriate to the discipline).										X	X	X		
Typically, holders of the qualification will be able to apply the methods and techniques that they have learned to review, consolidate, extend and apply their knowledge and understanding, and to initiate and carry out projects			X											

Typically, holders of the qualification will be able to critically evaluate arguments, assumptions, abstract concepts and data (that may be incomplete), to make judgements, and to frame appropriate questions to achieve a solution - or identify a range of solutions - to a problem				X							X
Typically, holders of the qualification will be able to communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.								X			X
And holders will have the qualities and transferable skills necessary for employment requiring the exercise of initiative and personal responsibility; decision-making in complex and unpredictable contexts; the learning ability needed to undertake appropriate further training of a professional or equivalent nature.							X				X

Subject Benchmark Statement(s)	<i>Subject Benchmark Statement Computing, February 2016</i>	Evidence and/or Course Learning Outcome(s) <i>How the course takes account of relevant subject benchmark statements</i>
i) demonstrate a requisite understanding of the main body of knowledge for their programme of study		LO1
ii) understand and apply essential concepts, principles and practices of the subject in the context of well-defined scenarios, showing judgement in the selection and application of tools and techniques		LO2, LO6
iii) produce work involving problem identification, the analysis, design and development of a system with accompanying documentation, recognising the important relationships between these stages and showing problem solving and evaluation skills drawing on supporting evidence		LO3, LO10, LO11
iv) produce small well-constructed programmes to solve well-specified problems		LO2, LO3

v) Demonstrate generic skills, an ability to work under guidance and as a team member.	LO4, LO8, LO10
vi) identify appropriate practices within a professional, legal and ethical framework and understand the need for continuing professional development.	LO5, LO7, LO9, LO1

Annex D: Diet Template

Full-Time October Start

Units for Year 1

Unit Code	Unit Name	Unit Location	Core/Option*	Period of study	Credits
NEWCIS003-1	Mathematics and Concepts for Computational Thinking	AA	Core	SEM1	30
NEWCIS022-1	Principles of Information Security	AA	Core	SEM1	30
NEWCIS023-1	Databases and Computer Networks	AA	Core	SEM2	30
NEWCIS013-1	Principles of Programming and Data Structures	AA	Core	SEM2	30

Units for Year 2

Unit Code	Unit Name	Unit Location	Core/Option*	Period of study	Credits
CIS015-2	Networking	AA	Core	SEM1	30
NEWCIS026-2	Information Security Management and Emerging Technologies	AA	Core	SEM1	30
NEWCIS027-2	Network Programming	AA	Option	SEM2	30
CIS022-2	Wireless communications and networking	AA	Option	SEM2	30
NEWCIS029-2	Switching and Routing	AA	Core	SEM2	30

Units for Year 3 - Professional Practice Year (if applicable)

Unit Code	Unit Name	Unit Location	Core/Option*	Period of study	Credits
CIS097-2	Professional Practice Year (Computer Science and Technology)	Off Campus	Option	TY	0

Units for Year 4 (with Professional Practice Year) or Year 3 (without Professional Practice Year)

Unit Code	Unit Name	Unit Location	Core/Option*	Period of study	Credits
CIS005-3	Advanced Networking	AA	Core	SEM1	30
NEWCIS010-3	Agile Project Management	AA	Core	SEM2	30
NEWCIS031-3	Undergraduate Project in Networking	AA	Core	TY	60

Part-time students do 60 credits in every Academic Year

Full-Time February Start**Units for Year 1**

Unit Code	Unit Name	Unit Location	Core/Option*	Period of study	Credits
NEWCIS023 -1	Databases and Computer Networks	AA	Core	SEM2	30
NEWCIS013 -1	Principles of Programming and Data Structures	AA	Core	SEM2	30
NEWCIS003 -1	Mathematics and Concepts for Computational Thinking	AA	Core	SEM1	30
NEWCIS022 -1	Principles of Information Security	AA	Core	SEM1	30

Units for Year 2

Unit Code	Unit Name	Unit Location	Core/Option*	Period of study	Credits
NEWCIS027 -2	Network Programming	AA	Option	SEM2	30
CIS022-2	Wireless communications and networking	AA	Option	SEM2	30
NEWCIS029 -2	Switching and Routing	AA	Core	SEM2	30
CIS015-2	Networking	AA	Core	SEM1	30
NEWCIS026 -2	Information Security Management and Emerging Technologies	AA	Core	SEM1	30

Units for Year 3 - Professional Practice Year (if applicable)

Unit Code	Unit Name	Unit Location	Core/Option*	Period of study	Credits
CIS097-2	Professional Practice Year (Computer Science and Technology)	Off Campus	Option	FY	0

Units for Year 4 (with Professional Practice Year) or Year 3 (without Professional Practice Year)

Unit Code	Unit Name	Unit Location	Core/Option*	Period of study	Credits
NEWCIS010-3	Agile Project Management	AA	Core	SEM2	30
CIS005-3	Advanced Networking	AA	Core	SEM1	30
NEWCIS031-3	Undergraduate Project in Networking	AA	Core	FY	60

Part-time students do 60 credits in every Academic Year