

## Programme Specification

**Programme Title: HND Computer Networks and Security**

<b>Awarding Institution:</b>	University of Bolton		
<b>Teaching Institution:</b>	University of Bolton		
<b>Division and/or Faculty/Institute:</b>	Faculty of Arts and Media Technologies		
<b>Professional accreditation</b>	Professional body	Professional body URL	Status of graduates
	-	-	-
<b>Final award(s):</b>	HND		
<b>Interim award(s)</b>	N/A		
<b>Exit or Fallback award(s)</b>	Certificate of Higher Education in Computer Networks and Security		
<b>Programme title(s)</b>	Computer Networks and Security		
<b>UCAS Code</b>	043G		
<b>JACS Code</b>	G420 Networks & Security		
<b>University Course Code(s)</b>	Full time: COM0013 Part time: COM5015		
<b>QAA Benchmark Statement(s)</b>	Computing		
<b>Other internal and external reference points</b>	<p>QAA Academic Infrastructure, including the Framework for Higher Education Qualifications and the Code of Practice</p> <p>UK Quality Code for Higher Education</p> <p>University of Bolton awards framework</p> <p>BTEC Specification for HND Computing and Systems Development, July 2011</p>		
<b>Language of study</b>	English		
<b>Mode of study and normal period of study</b>	Full time – 2 years Part time – 3 years		

**Admissions criteria**

You should have a minimum of one GCE A2-level pass (or equivalent) and five GCSEs at grade C or above (or equivalent), including English and Mathematics.

If English is not your first language you will need to complete a Secure English Language Test at IELTS 6.0 or equivalent.

In addition to attracting traditionally qualified school/college leavers, the HND Computing is suitable for students who have not been engaged in academic programmes of study for some years.

**Additional admissions matters**

N/A

**Fitness to practise declaration**

N/A

**Aims of the programme**

The principal aims of the programme are to:

1. provide students with a broad education in computer networks and security, with a special emphasis on the technical specification, design, implementation and maintenance of computer networks and security systems.
2. ensure that the students have access and exposure to the latest innovations and technology, in computer networks and security systems.
3. equip students with the skills and knowledge necessary to pursue a successful career in a variety of areas such as IT, computer networks, security and telecommunications industries.
4. gain familiarity with a wide range of computer network deployments. Studies will cover networks used in such diverse areas as banking, utilities, hospitals, public telecoms and all aspects of industry from small to large enterprises.
5. prepare students for direct employment or further study at degree level.
6. develop and improve the interpersonal and communications skills, particularly writing formal reports and giving presentations, as these skills are essential in the computer networks and security industry.
7. equip students with the knowledge necessary to understand the ethical and environmental issues they will encounter in industry in general.

## **Distinctive features of the programme**

The course focuses on the configuration and support of all types of computer networks. Intrinsic to the operation of computer networks is the need to operate securely to ensure data is maintained at all times.

Links with businesses provide 'live briefs' for coursework assignments to ensure students are working on meaningful projects. The programme leader maintains active links with businesses and former students who are now working in the industry to establish opportunities for work placements during vacation periods and after finishing the course.

Students will register with the Cisco Networking Academy to enrol for the Cisco Certified Networking Associate (CCNA) study programme. A Cisco certificate is awarded after successfully completing each of the four parts. Having completed the CCNA study programme, students can choose to sit the Cisco CCNA examination at an external testing centre. A separate charge is payable to CISCO for the external exam.

The first year of the course is common to all programmes in the Computing group, allowing flexible progression into the second year. This flexibility allows students the possibility of transferring to one of the other HND programmes in the Computing group at the end of Year 1. In the second year students study communications, wireless networking, mobile communications and voice/data integration and network architectures.

The classes are small so there is plenty of interaction with the lecturers and questions can always be answered. Guest speakers provide relevant, up-to-date input from practitioners in the industry.

The course is supported by dedicated network laboratories which are firewalled to allow students to experiment and evaluate attack tools without worrying about disrupting the wider university network. Many of the computing facilities can be accessed across the internet from home, allowing students to work on their assignments whenever and wherever they choose.

Every company has some form of digital infrastructure that supports the day-to-day running of the business. Successful HND students may choose to seek employment in a number of areas including large corporate and small to medium-sized enterprises (SMEs), large government organisations, local authorities, health authorities, network providers, internet service providers.

## Programme learning outcomes

### **K. Knowledge and understanding**

On completion of the programme successful students will be able to demonstrate systematic knowledge and understanding of:

1. business and professional aspects of the industry.
2. the gathering, processing, storage and management of data.
3. the development of structured software and its testing and maintenance.
4. the stages of the systems life cycle, and the use of appropriate tools and techniques therein.
5. the theory, concepts and principles of computer networks and security systems.

### **C. Cognitive, intellectual or thinking skills**

On completion of the programme successful students will be able to demonstrate the ability to:

1. demonstrate knowledge and understanding of essential facts, concepts, principles and theories relating to computing and computer applications.
2. identify and solve problems using a systematic approach to reach a solution.
3. investigate the existing body of knowledge in a particular field.
4. apply concepts and evaluate alternatives in designing new products and services.

### **P. Practical, professional or subject-specific skills**

On completion of the programme successful students will be able to demonstrate the ability to:

1. produce a systems requirements specification, including user interactions, interfaces and documentation.
2. understand the potential risks, security and safety aspects appropriate to the field of study, including risk.
3. select, and configure appropriate hardware and software to implement a secure networked computer system design using simulation where appropriate.
4. use appropriate theory and practice, for the specification and design of computer networks and security systems.

### **T. Transferable, key or personal skills**

On completion of the programme successful students will be able to demonstrate the ability to:

1. communicate effectively both orally and in writing and contribute effectively to a team.
2. manage their own learning and development including time management, organisational skills and self appraisal.
3. present a case involving quantitative and qualitative aspects.

## Programme structure

The HND Computer Networks and Security programme involves completing 120 credits at HE4 and 120 credits at HE5.

Module Code	Module title	Core/ Option/ Elective (C/O/E)	Credits	Length (periods)
CPU4001	Core Skills	C	20	1
CPU4002	Website Production	C	20	1
CPU4003	Information Systems & Databases	C	20	1
CPU4004	Introduction to Programming	C	20	1
CPU4005	Computer Platforms	C	20	1
CPU4006	Networking Fundamentals	C	20	1
CPU5000	Level 2 Project	C	20	1
CPU5003	Unix	C	20	1
CPU5009	Wireless Networks and Security	C	20	1
CPU5010	Routing Fundamentals	C	20	1
CPU5011	Network Architecture	C	20	1
CPU5012	Wide Area Networks	C	20	1

## Learning and teaching strategies

The programme uses a blended learning approach, combining face to face sessions with online work as appropriate. The learning and teaching methods typically used by tutors include, lectures, seminars, workshops, tutorials, e-learning, online sessions and support.

A significant amount of personal study time is expected to be undertaken by the student, comprising, for example, background reading, assignment work, preparation for seminars, and revision for examinations.

Active learning is promoted throughout the course, e.g. theoretical concepts being delivered in a framework of lectures, practical demonstrations and workshops applying theory to practice using activity based assignments.

Additional tutorial support is provided to HND Computer Networks & Security students during their studies.

**Learning activities (KIS entry)**

	Course Year	
	1	2
Scheduled learning and teaching activities	25%	25%
Guided independent study	75%	75%
Placement/study abroad	0%	0%

**Assessment strategy**

Assessment tasks are linked to the learning outcomes of each module and are completed before the end of the module.

Module assessments are typically either coursework or examination or a combination of both. In the second and final years formal written examinations take place during the last week of the module delivery period. Other types of assessment may include in-class tests, coursework assignments, presentations, projects.

Formative Assessment, which does not contribute to the final mark, is given to help the student improve their work in future. It may be given to the student verbally/written/online.

Summative assessment, which does contribute towards the final result, is normally given in writing to the student, with the opportunity for the student to receive more detailed verbal explanation.

**Assessment methods (KIS entry)**

	Course Year	
	1	2
Written exams	0%	42%
Coursework	84%	33%
Practical exams	16%	25%

## Assessment regulations

The University of Bolton Assessment Regulations for Undergraduate Modular Programmes apply.

## Grade bands and classifications

Grade Description	Mark %	Module and Overall Grade
Work of exceptional quality	70+	Distinction
Work of very good quality	60-69	Merit
Work of good quality	50-59	Pass
Work of satisfactory quality	40-49	Pass
Borderline fail	35-39	
Fail	Below 35	

## Grading

The award of HND with Distinction may be made where your overall average mark is at least 70%, normally calculated from modules at Level HE5.

The award of HND with Merit may be made where your overall average mark falls between 60 – 69.99 normally calculated from modules worth at Level HE5.

## Role of external examiners

External examiners are appointed for all programmes of study. They oversee the assessment process and their duties include: approving assessment tasks, reviewing assessment marks, attending assessment boards and reporting to the University on the assessment process.

## Support for student learning

- The programme is managed by a programme leader
- A more rounded and consolidated learning approach is achieved through the regular use of excellent laboratory facilities. These practical sessions are scheduled to coincide with the theoretical lecture based studies
- Technician support is available outside of scheduled class times. Students find this particularly helpful on project work
- An induction programme introduces student to the University and their programme
- Each student has a personal tutor, responsible for support and guidance
- Personal Development Planning (PDP) integrated into all programmes
- Feedback on formative and summative assessments

- A Student Centre providing a one-stop shop for information and advice
- University support services include housing, counselling, financial advice, careers and a disability
- A Chaplaincy
- Library and IT services
- Student Liaison Officers attached to each Faculty
- The Students' Union advice services
- Faculty and Programme Handbooks which provide information about the programme and University regulations
- The opportunity to develop skills for employment
- English language support for International students
- Placement opportunities may be available
- Access and use of virtual learning environments for each module

### **Methods for evaluating and enhancing the quality of learning opportunities**

- Programme committees with student representation
- Module evaluations by students
- Students surveys, e.g. National Student Survey (NSS)
- Annual quality monitoring and action planning through Programme Quality Enhancement Plans (PQEPs), Data Analysis Report (DARs) Subject Annual Self Evaluation Report (SASERs), Faculty Quality Enhancement Plans (FQEPs), University Quality Enhancement Plan (UQEP)
- Peer review/observation of teaching
- Professional development programme for staff
- External examiner reports
- Employer meetings and discussions

### **Other sources of information**

Student portal (<http://www.bolton.ac.uk/Students/>)

Students Union (<http://www.ubsu.org.uk/>)

Faculty or similar Handbook (<http://www.bolton.ac.uk/amt>)

Programme Handbook

Student Entitlement Statement

Module database

Moodle (for the programme)

External examiner reports

<http://www.bolton.ac.uk/Quality/QAECContents/ExternalExaminersReports/Home.aspx>

### **Document control**

**Author(s)**

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<b>Approved by:</b>	Sarah Riches Chair University Validation Panel
<b>Date approved:</b>	September 2012
<b>Effective from:</b>	September 2012
<b>Document History:</b>	

## Learning outcomes map

Module title	Mod Code	Status C/O/E	K1	K2	K3	K4	K5	C1	C2	C3	C4	P1	P2	P3	P4	T1	T2	T3
Core Skills	CPU4000	C	DT					DTA		DTA						DTA	DTA	DT
Website Production	CPU4001	C	D								DTA	DTA			DTA	DA		
Information Systems and Databases	CPU4002	C	D	DTA		DT	DT	DTA	DTA		DTA	DT		DTA		DTA	DT	
Introduction to Programming	CPU4003	C	D	DT	DTA	DT	DT	DT				DT				D		
Computer Platforms	CPU4004	C	D	DT				DTA				DT	DTA		D	D		
Networking Fundamentals	CPU4005	C	D					DTA				DT	DTA	DTA	DTA	D		
Level 2 Project	CPU5000	C	DTA	DT		DTA	DTA	DT	DTA	DTA	DTA	DTA		DTA		DA	DTA	DTA
Unix	CPU5003	C	D				D	D	D				DTA	DTA	D	D		
Wireless Networks and Security	CPU5009	C	D				DTA		D			D	DTA	DTA	DTA	D		
Routing Fundamentals	CPU5010	C		D			DTA		D				DT	DTA	D	D		
Network Architecture	CPU5011	C		D			DTA		D				DT	DTA	DT	D		
Wide Area Networks	CPU5012	C					DTA		D				DTA	DTA	DTA	D		

### Key

K = Knowledge and understanding

C = Cognitive, Intellectual and thinking skills

D = Developed, T = Taught, A = Assessed

P = Practical, professional and subject specific skills

T = Transferable, key or personal skills.

## Module listing

Module title	Module Code	Level	Credits	Type	Core/Option/Elective C/O/E	Assessment 1			Assessment 2		
						Assessment type	Assessment %	Add Y if final item	Assessment type	Assessment %	Add Y if final item
Core Skills	CPU4000	HE4	20	STAN	CORE	CW	100	Y			
Website Production	CPU4001	HE4	20	STAN	CORE	CW	50		CW	50	Y
Information Systems & Databases	CPU4002	HE4	20	STAN	CORE	CW	100	Y			
Introduction to Programming	CPU4003	HE4	20	STAN	CORE	PRA	30		CW	<b>70</b>	<b>Y</b>
Computer Platforms	CPU4004	HE4	20	STAN	CORE	CW	50	Y	CW	50	
Networking Fundamentals	CPU4005	HE4	20	STAN	CORE	PRA	50		PRA	50	<b>Y</b>
Level 2 Project)	CPU5000	HE4	20	STAN	CORE	CW	50		CW	<b>50</b>	<b>Y</b>
Unix	CPU5003	HE5	20	STAN	CORE	CW	50		EX	50	<b>Y</b>
Wireless Networks and Security	CPU5009	HE5	20	STAN	CORE	CW	50		EX	50	<b>Y</b>
Routing Fundamentals	CPU5010	HE5	20	STAN	CORE	PRA	50		EX	<b>50</b>	<b>Y</b>
Network Architecture	CPU5011	HE5	20	STAN	CORE	PRA	50		EX	50	<b>Y</b>
Wide Area Networks	CPU5012	HE5	20	STAN	CORE	PRA	50		EX	50	<b>Y</b>

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Date: 12<sup>th</sup> July 2012

## Bolton Key Core Curriculum requirements

Module Title	Module Code	C/O/E	Employability											Bolton Values		
			PDP	Communication	Team work	Organisation & Planning	Numeracy	Problem solving	Flexibility & adaptability	Action planning	Self awareness	Initiative	Personal impact & confidence	Inter-nationalisation	Environmental sustainability	Social, public and ethical responsibility
Core Skills	CPU4000	C	D,T,A	D,T,A	D,T	D,T,A	D	D,T,A	D	D,T	D	D	D,T	D	D	D,T,A
Website Production	CPU4001	C		D,A	D	D,T,A		D,T,A	D	D,T,A		D		D		D
Information Systems & Databases	CPU4002	C		D,A		D,T,A	D	D,T,A	D	D,T,A		D		D		D
Introduction to Programming	CPU4003	C		D,A		D,T,A	D	D,T,A	D	D,T,A		D		D		D
Computer Platforms	CPU4004	C		D,A		D	D	D,T,A	D	D		D		D	D	D
Networking Fundamentals	CPU4005	C		D,A		D,T,A	D,T,A	D,T,A	D	D		D		D		D
Level 2 Project	CPU5000	C	D,T,A	D,T,A	D	D,T,A	D	D,T,A	D	D	D	D	D	D	D	D
Unix	CPU5003	C		D,A		D,T,A		D,T,A	D	D	D	D		D		D
Wireless Networking	CPU5009	C		D,A	D	D	D,T,A	D,T,A	D	D	D	D	D	D	D	D
Routing Fundamentals	CPU5010	C		D,A	D	D,T,A		D,T,A	D	D	D	D	D	D	D	D
Network Architecture	CPU5011	C		D,A		D,T,A		D,T,A	D		D	D	D	D,T	D	D
Wide Area Networks	CPU5012	C		D,A		D,T,A		D,T,A	D	D	D	D	D	D	D	D

### Key

D = Developed, T = Taught, A = Assessed

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