

**Programme Specification**

**BSc (Hons) Computer Networks and Security with Foundation**

|                                                     |                                                                                                                   |                   |                     |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------|---------------------|
| <b>Awarding Institution:</b>                        | University of Bolton                                                                                              |                   |                     |
| <b>Teaching Institution:</b>                        | University of Bolton                                                                                              |                   |                     |
| <b>Division and/or Faculty/Institute:</b>           | Creative Technologies Academic Group                                                                              |                   |                     |
| <b>Professional accreditation</b>                   | Professional body                                                                                                 | Professional body | Status of graduates |
|                                                     |                                                                                                                   | URL               |                     |
| <b>Final award(s):</b>                              | BSc (Hons)                                                                                                        |                   |                     |
| <b>Interim award(s)</b>                             | None                                                                                                              |                   |                     |
| <b>Exit or Fallback award(s)</b>                    | Certificate of Foundation<br>Certificate of Higher Education<br>Diploma of Higher Education                       |                   |                     |
| <b>Programme title(s)</b>                           | Computer Networks and Security with Foundation                                                                    |                   |                     |
| <b>UCAS Code</b>                                    | G435                                                                                                              |                   |                     |
| <b>JACS Code</b>                                    | I120 Networks & Communications                                                                                    |                   |                     |
| <b>University Course Code(s)</b>                    | Full time: COM0019                                                                                                |                   |                     |
| <b>QAA Benchmark Statement(s)</b>                   | Computing                                                                                                         |                   |                     |
| <b>Other internal and external reference points</b> | QAA Academic Infrastructure, including the Framework for Higher Education Qualifications and the Code of Practice |                   |                     |
|                                                     | UK Quality Code for Higher Education                                                                              |                   |                     |
|                                                     | University of Bolton awards framework                                                                             |                   |                     |
|                                                     | BCS Guidelines on Course Accreditation, Sept 2010                                                                 |                   |                     |
| <b>Language of study</b>                            | English                                                                                                           |                   |                     |
| <b>Mode of study and normal period of study</b>     | Full time – 4 years                                                                                               |                   |                     |
| <b>Admissions criteria</b>                          |                                                                                                                   |                   |                     |

For UCAS tariff points please refer to our website ([www.bolton.ac.uk](http://www.bolton.ac.uk)).

You will have at least one but preferably two A2-levels (or equivalent) in any subjects. In addition 5 GCSEs at Grade C or above including English and Mathematics will usually be required.

Students with non-traditional qualifications but relevant experience or a suitable portfolio of work which is deemed a reasonable substitute for the qualifications may be made an offer.

If English is not your first language you will also need IELTS 6.0 (or equivalent).

Interviews will usually be conducted on a one to one basis either in person or via telephone by a member of the course team. Applicants may at some point be required to show a portfolio and may be asked a variety of questions designed to assess their suitability for the course.

### **Aims of the programme**

The principal aims of the programme are to:

1. develop academic and professional skills to allow for opportunity to study at higher levels and enhance career development.
2. 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.
3. ensure that the students have access and exposure to the latest innovations and technology in computer networks and security systems.
4. 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.
5. 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.
6. prepare students for direct employment or postgraduate study.
7. develop and improve interpersonal and communications skills, particularly writing formal reports and giving presentations, as these skills are essential in the computer networks and security industry.
8. 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 design, configuration, management and support of all types of computer networks. Intrinsic to the professional operation of computer networks is the need to operate securely to ensure data is maintained at all times against all possible sources of disruption such as operator error, equipment malfunction, hacking, organised crime or interference by foreign governments.

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.

In the second and third year of study, students will register with the Cisco Networking Academy to enrol for 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 Foundation and Level 1 (second year) of the course is common to all programmes in the Computing group and gives students a broad introduction to various computing technologies and allows flexible progression on to Level 2 (third year). This flexibility allows students the possibility of transferring to one of the other BSc (Hons) programmes in the Computing group at the end of Level 1.

At Level 2 (third year) students study communications, wireless networking, mobile communications and voice/data integration and network architectures. At Level 3 (fourth year) the emphasis is on independent, research-based work; the undertaking of a major project and the design and management of large, secure enterprise networks.

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. Graduates 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.

Graduates of the BSc (Hons) Computer Networks & Security with Foundation will hold an internationally recognised qualification.

## **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.
6. research methods and the contribution of a literature review to a project or investigation within a managed timescale.
7. a broad range of fundamental computer technologies

### **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.
5. critically analyse findings, reflect and then apply skills and knowledge to new areas.
6. Integrate a variety of investigative skills, synthesise and then apply to problem solving.
7. explain fundamental computer methods and tools

### **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.
5. plan, manage and control a project, taking account of professional and ethical issues.
6. critically appraise, justify and select hardware and software for a secure computer network system.
7. describe and utilise computer systems and software

## 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, involving quantitative and qualitative aspects.
2. manage their own learning and development including time management, organisational skills and self appraisal.
3. prepare for employment in the industry and recognise the need for continuing professional development.
4. carry out a substantial piece of independent work and undertake a critical evaluation.
5. Outline and demonstrate appropriate and ethical testing and research strategies

## Programme structure

There are 4 levels (FE3, HE4, HE5, and HE6). Each level has 120 credits and takes place over two trimesters; a fulltime student would normally complete 60 credits per trimester. All modules at foundation level must be completed successfully before students are allowed to progress onto level 1 of the degree course. All modules on the course are core and therefore must be successfully completed. The credit value of modules is 20 except for the major project, which has a credit value of 40.

| Module Code      | Module title                                     | Status | Credits | 1,2 or 3 Trimesters |
|------------------|--------------------------------------------------|--------|---------|---------------------|
| <b>Level FE3</b> |                                                  |        |         |                     |
| CTF3001          | Fundamentals of Programming                      | C      | 20      | 1                   |
| CTF3002          | Logical Analysis and Problem Solving             | C      | 20      | 1                   |
| CTF3003          | Introduction to Digital Entertainment Technology | C      | 20      | 1                   |
| CTF3004          | Foundation Project                               | C      | 20      | 1                   |
| CTF3005          | Computers in Society                             | C      | 20      | 1                   |
| CTF3006          | Networks and Hardware                            | C      | 20      | 1                   |
| <b>Level HE4</b> |                                                  |        |         |                     |
| CPU4000          | Core Skills                                      | C      | 20      | 1                   |
| CPU4001          | Website Production                               | C      | 20      | 1                   |
| CPU4002          | Information Systems & Databases                  | C      | 20      | 1                   |
| CPU4003          | Introduction to Programming                      | C      | 20      | 1                   |
| CPU4004          | Computer Platforms                               | C      | 20      | 1                   |
| CPU4005          | Networking Fundamentals                          | C      | 20      | 1                   |
| <b>Level HE5</b> |                                                  |        |         |                     |
| 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                   |

## Level HE6

|         |                                                   |   |    |   |
|---------|---------------------------------------------------|---|----|---|
| CPU6000 | Professional issues in Computing                  | C | 20 | 1 |
| CPU6001 | Major Project                                     | C | 40 | 2 |
| CPU6004 | Network Security                                  | C | 20 | 1 |
| CPU6006 | Enterprise Infrastructure,<br>Management & Design | O | 20 | 1 |
| CPU6009 | Network Management                                | O | 20 | 1 |
| CPU6010 | Network Design & Integration                      | O | 20 | 1 |
| CPU6011 | Advanced Operating Systems                        | O | 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.

## Learning activities (KIS entry)

|                                            | Course Year |     |     |     |
|--------------------------------------------|-------------|-----|-----|-----|
|                                            | 1           | 2   | 3   | 4   |
| Scheduled learning and teaching activities | 30%         | 25% | 25% | 25% |
| Guided independent study                   | 70%         | 75% | 75% | 75% |
| Placement/study abroad                     | 0%          | 0%  | 0%  | 0%  |

## Assessment strategy

Assessment tasks are linked to the learning outcomes of each module and are completed before the end of the module. Types of assessment include: Written examinations (unseen or open-book), written reports, assignments, projects, case study analyses, in-class tests (practical, written or online), demonstrations and presentations.

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   | 3   | 4   |
| Written exams   | 0%          | 0%  | 17% | 17% |
| Coursework      | 92%         | 84% | 66% | 75% |
| Practical exams | 8%          | 16% | 17% | 8%  |

### Assessment regulations

This programme by the University assessment regulations.

[Assessment Regulations for Undergraduate Modular Programmes](#)

### Grade bands and classifications

#### Grade Description

| Honours Degree  | Mark     | BTEC Equivalent |
|-----------------|----------|-----------------|
| i               | 70%+     | Distinction     |
| ii.i            | 60-69%   | Merit           |
| ii.ii           | 50-59%   | Pass            |
| iii             | 40-49%   | Pass            |
| Borderline Fail | 35-39%   | Fail            |
| Clear Fail      | Below 35 | Fail            |

### 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
- The foundation year has a dedicated coordinator / year tutor
- 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 students 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 Academic Group
- The Students' Union advice services
- Student 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), Postgraduate Taught Experience Survey (PTES)
- 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



## Other sources of information (Hyperlinks)

Student portal <http://www.bolton.ac.uk/Students/Home.aspx>

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

Student Handbook

Programme Handbook

Student Entitlement Statement

Module database

Moodle

External examiners reports

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

The university careers service and web pages at

<http://www.bolton.ac.uk/Careers/Home.aspx>

|                          |                           |
|--------------------------|---------------------------|
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| <b>Approved by:</b>      |                           |
| <b>Date approved:</b>    |                           |
| <b>Effective from:</b>   | September 2013            |
| <b>Document History:</b> |                           |



**Foundation Year - Learning outcomes map**

| Module title                                     | Code    | Status<br>(C/O/E) | K6  | K7  | C1  | C2  | C7  | P2  | P7  | T1  | T2  | T5  |
|--------------------------------------------------|---------|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Fundamentals of Programming                      | CTF3001 | CORE              |     |     | DTA |     | DTA |     | DTA | D   | D   | DTA |
| Logical Analysis and Problem Solving             | CTF3002 | CORE              |     |     |     | DTA | DTA |     | DA  | DA  | D   | DTA |
| Introduction to Digital Entertainment Technology | CTF3003 | CORE              |     | DTA | DTA |     | DTA |     | D   | D   | D   |     |
| Foundation Project                               | CTF3004 | CORE              | DTA |     |     |     |     |     | D   | DTA | DTA |     |
| Computers in Society                             | CTF3005 | CORE              |     | DTA |     |     | DTA | DTA | DA  | D   | D   |     |
| Networks and Hardware                            | CTF3006 | CORE              |     | DTA | DTA |     | DTA | DTA | DTA | D   | D   | DTA |

**K. Knowledge and understanding P. Practical, professional and subject specific skills C. Cognitive, Intellectual and thinking skills T. Transferable, key or personal skills**

**D = Development T = Taught A = Assessed**

## Learning outcomes map

| Module title                                   | Mod Code | Status<br>C/O/E | K1  | K2  | K3  | K4  | K5  | K6  | C1  | C2  | C3  | C4  | C5  | C6  | P1  | P2  | P3  | P4  | P5  | P6  | T1  | T2  | T3  | T4  |
|------------------------------------------------|----------|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Core Skills                                    | CPU4000  | C               | DT  |     |     |     |     | 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 | DTA | DT  | DTA | DTA | DTA | D   | DTA | DTA |     | DTA |     | DTA |     | DA  | DTA | DTA | D   |
| Unix                                           | CPU5003  | C               | D   |     |     | DT  | D   |     | D   | D   | D   |     |     |     |     | DTA | DTA | D   |     |     | D   |     |     |     |
| Wireless Networks and Security                 | CPU5009  | C               | D   |     |     |     | DTA | D   |     | 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   |     |     |     |
| Professional Issues in Computing               | CPU6000  | C               | DTA |     |     | DTA | DTA | DTA |     |     | DTA |     | DTA |     |     | DT  |     |     | DTA |     | DTA |     | DTA | DTA |
| Major Project                                  | CPU6001  | C               | DTA |     | DA  | DA  | DA  | DTA |     | DA  | DA  | DA  | DA  | DTA | DTA |     | DA  |     | DTA | DTA | DA  | DA  | D   | DTA |
| Network Security                               | CPU6004  | C               | D   |     |     |     | DTA | D   |     |     |     |     | D   | D   |     |     | D   | D   |     | DTA |     |     |     | DTA |
| Enterprise Infrastructure, Management & Design | CPU6006  | O               | D   | D   |     |     | DT  | D   |     |     | D   |     | D   | D   | D   |     | D   | D   |     | DTA |     | DTA |     | DTA |
| Network Management                             | CPU6009  | O               | D   |     |     |     |     | D   |     |     | D   |     | DTA | DTA |     |     | D   | D   |     | DTA |     |     |     | DTA |
| Network Design and Integration                 | CPU6010  | O               | D   |     |     |     |     | D   |     |     | D   |     | DTA | DTA | D   |     | D   | D   |     | DTA |     |     |     | DTA |
| Advanced Operating Systems                     | CPU6011  | O               |     | D   |     |     |     | D   |     |     |     | D   |     |     |     |     | D   | D   |     | D   |     |     |     | DTA |

**K. Knowledge and understanding P. Practical, professional and subject specific skills C. Cognitive, Intellectual and thinking skills T. Transferable, key or personal skills**

**D = Development T = Taught A = Assessed**

Programme specification: BSc (Hons) Computer Networks and Security

Date: July 2013

| Foundation Year -<br>Module List                       | Code    | Level | Credit | Type | Status<br>(C/O/E) | Assessment 1       |                 |                        | Assessment 2       |                 |                        |
|--------------------------------------------------------|---------|-------|--------|------|-------------------|--------------------|-----------------|------------------------|--------------------|-----------------|------------------------|
|                                                        |         |       |        |      |                   | Assessment<br>type | Assessment<br>% | Add Y if<br>final item | Assessment<br>type | Assessment<br>% | Add Y if<br>final item |
| Fundamentals of Programming                            | CTF3001 | FE3   | 20     | STAN | CORE              | PRA                | 50              |                        | CW                 | 50              | Y                      |
| Logical Analysis and Problem<br>Solving                | CTF3002 | FE3   | 20     | STAN | CORE              | CW                 | 50              |                        | CW                 | 50              | Y                      |
| Introduction to Digital<br>Entertainment<br>Technology | CTF3003 | FE3   | 20     | STAN | CORE              | CW                 | 50              |                        | CW                 | 50              | Y                      |
| Foundation Project                                     | CTF3004 | FE3   | 20     | STAN | CORE              | CW                 | 100             | Y                      |                    |                 |                        |
| Computers in Society                                   | CTF3005 | FE3   | 20     | STAN | CORE              | CW                 | 50              |                        | CW                 | 50              | Y                      |
| Networks and Hardware                                  | CTF3006 | FE3   | 20     | STAN | CORE              | CW                 | 50              |                        | CW                 | 50              | Y                      |

**PRA (Practical); PROJ (Project); STAN (Standard); EX (Written Exam); CW (Coursework)**

## Module listing

| Module title                                   | Module Code | Level | Credits | Type  | Status (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              | 70           | Y                   |
| Computer Platforms                             | CPU4004     | HE4   | 20      | STAN  | CORE           | CW              | 50           | Y                   | CW              | 50           |                     |
| Networking Fundamentals                        | CPU4005     | HE4   | 20      | STAN  | CORE           | PRA             | 50           |                     | PRA             | 50           | Y                   |
|                                                |             |       |         |       |                |                 |              |                     |                 |              |                     |
| Level 2 Project                                | CPU5000     | HE5   | 20      | STAN  | CORE           | CW              | 50           |                     | CW              | 50           | Y                   |
| Unix                                           | CPU5003     | HE5   | 20      | STAN  | CORE           | CW              | 50           |                     | EX              | 50           | Y                   |
| Wireless Networks and Security                 | CPU5009     | HE5   | 20      | STAN  | CORE           | CW              | 50           |                     | EX              | 50           | Y                   |
| Routing Fundamentals                           | CPU5010     | HE5   | 20      | STAN  | CORE           | PRA             | 50           |                     | EX              | 50           | Y                   |
| Network Architecture                           | CPU5011     | HE5   | 20      | STAN  | CORE           | PRA             | 50           |                     | EX              | 50           | Y                   |
| Wide Area Networks                             | CPU5012     | HE5   | 20      | STAN  | CORE           | PRA             | 50           |                     | EX              | 50           | Y                   |
|                                                |             |       |         |       |                |                 |              |                     |                 |              |                     |
| Professional Issues in Computing               | CPU6000     | HE6   | 20      | STAN  | CORE           | PRA             | 50           |                     | CW              | 50           | Y                   |
| Major Project                                  | CPU6001     | HE6   | 40      | PROJ. | CORE           | CW              | 100          | Y                   |                 |              |                     |
| Network Security                               | CPU6004     | HE6   | 20      | STAN  | CORE           | CW              | 50           |                     | EX              | 50           | Y                   |
| Enterprise Infrastructure, Management & Design | CPU6006     | HE6   | 20      | STAN  | OPTION         | CW              | 50           |                     | CW              | 50           | Y                   |
| Network Management                             | CPU6009     | HE6   | 20      | STAN  | OPTION         | CW              | 50           |                     | EX              | 50           | Y                   |
| Network Design and Integration                 | CPU6010     | HE6   | 20      | STAN  | OPTION         | CW              | 100          | Y                   |                 |              |                     |
| Advanced Operating Systems                     | CPU6011     | HE6   | 20      | STAN  | OPTION         | CW              | 50           |                     | EX              | 50           | Y                   |

**PRA (Practical); PROJ (Project); STAN (Standard); EX (Written Exam); CW (Coursework)**

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Date: July 2013

### Foundation Year - Bolton Key Core Curriculum requirements

| Module Title                                     | Code    | Status<br>(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 |
| Fundamentals of Programming                      | CTF3001 | CORE              | DA            | D             | DA        | D                       |          | D               |                            | D               |                |            | D                            |                       |                              |                                           |
| Logical Analysis and Problem Solving             | CTF3002 | CORE              | DA            | D             | DA        | D                       | DTA      | DTA             | D                          | DTA             |                |            | D                            |                       |                              |                                           |
| Introduction to Digital Entertainment Technology | CTF3003 | CORE              | DA            | D             | DA        | D                       |          | D               |                            |                 |                |            | D                            |                       |                              |                                           |
| Foundation Project                               | CTF3004 | CORE              | DTA           | DTA           | DTA       | DTA                     |          | D               | D                          | DTA             | D              | D          | D                            |                       |                              |                                           |
| Computers in Society                             | CTF3005 | CORE              | DA            | D             | DA        | D                       |          |                 |                            | D               |                |            | D                            | DTA                   | DTA                          | DTA                                       |
| Networks and Hardware                            | CTF3006 | CORE              | DA            | D             | DA        | D                       |          | D               |                            | D               |                |            | D                            |                       | D                            |                                           |

**D = Development      T = Taught      A = Assessed**

## 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 y                              | 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                     |                              |                                           |
| Wireless Networks and Security                 | CPU5009     | C     |               | D,A           | D         | D                       | D,T,A    | D,T,A           | 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                                         |
| Network Architecture                           | CPU5011     | C     |               | D,A           |           | D,T,A                   |          | D,T,A           | D                          |                 |                | D          | D                            | D                     | D                            | D                                         |
| Wide Area Networks                             | CPU5012     | C     |               | D,A           |           | D,T,A                   |          | D,T,A           | D                          | D               |                | D          | D                            | D                     | D                            | D                                         |
| Professional Issues in Computing               | CPU6000     | C     | D             | D,A           | D,T,A     | D,A                     |          | D,A             | D                          | D               | D              | D          | D                            | D                     | D                            | D,T                                       |
| Major Project                                  | CPU6001     | C     | D,T           | D,A           |           | D,T,A                   | D        | D,A             | D                          | D,T,A           | D              | D          | D                            | D                     | D                            | D                                         |
| Network Security                               | CPU6004     | C     |               | D,A           |           | D                       |          | D,T,A           | D                          | D               |                | D          | D                            | D                     |                              | D                                         |
| Enterprise Infrastructure, Management & Design | CPU6006     | O     |               | D,A           |           | D,A                     |          | D,T,A           | D                          | D               |                | D          | D                            | D                     | D                            | D                                         |
| Network Management                             | CPU6009     | O     |               | D,A           | D,T,A     | D                       | D,T,A    | D,T,A           | D                          | D               |                | D          | D                            | D                     | D                            | D                                         |
| Network Design and Integration                 | CPU6010     | O     |               | D,A           | D         | D,T,A                   |          | D,T,A           | D                          | D               |                | D          | D                            | D                     | D                            | D                                         |
| Advanced Operating Systems                     | CPU6011     | O     |               | D,A           | D         | D,T,A                   |          | D,T,A           | D                          | D               |                | D          | D                            | D                     | D                            | D                                         |

**D = Developed, T = Taught, A = Assessed**

Programme specification: BSc (Hons) Computer Networks and Security

Date: July 2013