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# Programme Specification

**Title of Course: BSc (Hons) Computing (Top-up)**

**Date Specification Produced:** September 2016, for academic year 2016/17

**Date Specification Last Revised:** September 2016

This Course Specification is designed for prospective students, current students, academic staff and potential employers. It provides a concise summary of the main features of the course and the intended learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the teaching, learning and assessment methods, learning outcomes and content of each module can be found in Student Handbooks and Module Descriptors.

**SECTION 1: GENERAL INFORMATION**

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| **Title:** | BSc (Hons) Computing |
| **Awarding Institution:** | Kingston University |
| **Teaching Institution:** | *North East Surrey College Of Technology* |
| **Location:** | *NESCOT* |
| **Course Accredited by:** |  |

**SECTION2: THE COURSE**

1. **Course Introduction**

The aim of the BSc one year top up in Computing is for students to achieve at a high academic standard and to provide them with the technical skills to become computing professionals. This is achieved in the following ways:

* The BSc top-up is an Undergraduate Degree Program designed to support those progressing from the HND and Foundation Degree into University Education.
* Our courses give students relevant academic and technical skills, while broadening their employment options through the development of research, practical work and theoretical study.
* Our industry contacts inform the composition of the disciplines within the program and give students the opportunity to use that knowledge in embedded work projects.

The NESCOT BSc (Hons) Computing is respected by local employers and industry. The course is designed as a one year top-up for students who have a relevant HND or Foundation Degree and a suitable profile of achievement.

The smooth transition from these level 5 courses is ensured through rigorous assessment as part of the interview and selection process, including diagnostic tests covering the core subjects, graded interview of candidates in addition to literacy and numeracy assessment. This information is used as the basis for bridging courses that support suitable candidates into gaining the additional research and academic writing skills to succeed on the program. The support process is ongoing and assists with any knowledge or skills gaps which are required beginning of the course. The assessment and recruitment process also allows the program manager to identify the appropriate route for each candidate.

The BSc (Hons) Computing is offered in both full-time and part-time modes and has an excellent history of work experience both in large national companies and in small and medium sized (SME) industries. The curriculum is backed by the research undertaken within the School of Accounting, Business and Computing.

In addition it is informed by the College’s ABC Industrial Forum which includes representatives from the IT industry. Links with companies like, SAP, CISCO, LINUX, MICROSOFT and CYBEROAM keep the course vocationally relevant, and respected by employers. Our staff are highly qualified teaching professionals and all have industry experience across a variety of disciplines.

Vendor curriculums are an invaluable addition to the course, as they help students progress their education and provide the right skills for learners to find sustainable employment as an IT professional. Aspects of the Cisco CCNA, Cyberoam UTM CCNSP, Microsoft Server Admin and Oracle Data modelling and Database Programming are embedded into the curriculum content. This means that students will have the opportunity to gain certification in this area with limited further study.

To complement a chosen career path, the BSc (Hons) Computing can be tailored to the student’s own academic and technical strengths through the identification of optional modules to be taken in key areas of Software Development and Advanced Networking.

The course is designed to equip students with the knowledge and skills base required for life-long learning in a continually expanding area. To facilitate this, the course team provide a range of learning and teaching strategies and experiences for our students.

Students undertake project based exercises on the course, which culminate in an individual capstone project. The allocated projects are designed to provide the ‘honours challenge’ expected of graduates in this field.

Students are expected to undertake work experience during the course to further develop employability skills, and to allow exploration of new technologies and techniques.

Most full-time students who have completed the course and work experience have gained employment as a result of their studies and those who studied part-time have gained promotion or have taken up new posts.

Students progressing from level 5 higher education courses will develop their practical and analytical skills to achieve a Degree level qualification and go on to meet the growing global demand for workers in the computing sector. Graduates from the BSc top up program will also be given the viable route of continuing with post-graduate study through a Master’s Degree.

# Aims of the Course

* Provide a rewarding learning experience which combines research and academic writing skills with the study of communication technology, operating systems, wireless networks, software development, security and business management relevant to industrial and commercial environments.
* Provide students with the skills and professional qualities necessary for a successful career in Computing or progression to post graduate study.
* Meet the changing needs of industry, commerce and public services and to respond to technological developments in the Computing field as appropriate.

1. **Intended Learning Outcomes**

The course provides opportunities for students to develop and demonstrate knowledge and understanding, skills and other attributes in the following areas. The course outcomes are referenced to the QAA subject benchmarks for Computing (March 2007) 2nd Edition and the Framework for Higher Education Qualifications in England, Wales and Northern Ireland (2008), and relate to the typical student.

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| **Course Learning Outcomes** | | | | | | |
|  | **Knowledge and Understanding**  **On completion of the course students will be able to:** |  | **Intellectual skills – able to:**  **On completion of the course students will be able to:** | |  | **Subject Practical skills**  **On completion of the course students will be able to:** |
| A1 | Demonstrate detailed knowledge of Computing with specialisation and depth in identified areas. | B1 | Undertake research and critically evaluate data and other information sources. | | C1 | Decide on the effectiveness of various practical approaches and recommend solutions. |
| A2 | Analyse problems and identify strategies for their solutions with consideration of technical factors. | B2 | Work autonomously and accept accountability and work effectively as part of a team. | | C2 | Demonstrate technical awareness in Computing which can be applied to a rapidly changing environment. |
| A3 | Demonstrate awareness of relevant social, ethical, legal, professional and environmental issues applicable to rapidly evolving technology based business; | B3 | Critically evaluate key theoretical frameworks and principles in a range of contexts appropriately integrate theory and practice. | | C3 | Operate effectively in a variety of platforms and environments. |
| A4 | Plan, organise and review professional development to ensure continuous improvement. | B4 | Use technical literature effectively to develop own knowledge base and understanding and formulate their own technical theories, arguments and ideas. | | C4 | Use a wide range of workshop equipment safely, carefully, precisely and efficiently. |
| **Key Skills** | | | | | | |
|  | **Self Awareness Skills** |  | **Communication Skills** | |  | **Interpersonal Skills** |
| AK1 | Take responsibility for own learning and plan for and record own personal development | BK1 | Express ideas clearly and unambiguously in writing and the spoken work | | CK1 | Work well with others in a group or team |
| AK2 | Recognise own academic strengths and weaknesses, reflect on performance and progress and respond to feedback | BK2 | Present, challenge and defend ideas and results effectively orally and in writing | | CK2 | Work flexibly and respond to change |
| AK3 | Organise self effectively, agreeing and setting realistic targets, accessing support where appropriate and managing time to achieve targets | BK3 | Actively listen and respond appropriately to ideas of others | | CK3 | Discuss and debate with others and make concession to reach agreement |
| AK4 | Work effectively with limited supervision in unfamiliar contexts |  |  | | CK4 | Give, accept and respond to constructive feedback |
|  |  |  |  | | CK5 | Show sensitivity and respect for diverse values and beliefs |
|  | **Research and information Literacy Skills** |  | **Numeracy Skills** | |  | **Management & Leadership Skills** |
| DK1 | Search for and select relevant sources of information | EK1 | Collect data from primary and secondary sources and use appropriate methods to manipulate and analyse this data | | FK1 | Determine the scope of a task (or project) |
| DK2 | Critically evaluate information and use it appropriately | EK2 | Present and record data in appropriate formats | | FK2 | Identify resources needed to undertake the task (or project) and to schedule and manage the resources |
| DK3 | Apply the ethical and legal requirements in both the access and use of information | EK3 | Interpret and evaluate data to inform and justify arguments | | FK3 | Evidence ability to successfully complete and evaluate a task (or project), revising the plan where necessary |
| DK4 | Accurately cite and reference information sources | EK4 | Be aware of issues of selection, accuracy and uncertainty in the collection and analysis of data | | FK4 | Motivate and direct others to enable an effective contribution from all participants |
| DK5 | Use software and IT technology as appropriate |  |  | |  |  |
|  | **Creativity and Problem Solving Skills** |  |  | |  |  |
| GK1 | Apply scientific and other knowledge to analyse and evaluate information and data and to find solutions to problems |  |  | |  |  |
| GK2 | Work with complex ideas and justify judgements made through effective use of evidence |  |  | |  |  |
| **Teaching/learning methods and strategies** | | | | | | |
| The range of learning and teaching methods and strategies include staff-student contact with a mixture of eLearning as part of blended learning: | | | | | | |
| * Lectures * Computer workshops/laboratories * Group tutorials * One-to-one tutorials * Seminars | | | | * Problem solving classes * Directed reading (texts and work books: hard or e-copy) * Directed course of internet based lecture and tutorial videos * Directed research projects * External Visits/ Guest speakers | | |
| **Assessment strategies** | | | | | | |
| The assessment strategies employed are designed to include formative and summative assessments which test the learning outcomes of the course using the following mechanisms: | | | | | | |
| * Written examinations/tests * Multiple choice tests * Short answer tests * Practical demonstrations * Data interpretation exercises * Design exercises * Group presentations * Individual presentations * Essays | | | | * Poster presentations * Essays * Individual reports * Group reports * Researched literature surveys * Simulation exercises * Case studies * Research * Computer-aided assessment | | |

1. **Entry Requirements**

The minimum entry qualifications for the course are:

* Foundation degree in Computing from a UK university (or international equivalent recognised by NARIC)
* We will consider a range of alternative qualifications or experience that is equivalent to the typical offer. Applications from international students with equivalent qualifications are welcome
* Edexcel BTEC Level 5 HND Diploma in Computing and Systems Development with a Merit Grade profile.
* British Computer Society (BCS) Diploma in IT (level 5) - including completion of the professional project
* HNC in computing subject plus at least 3 years relevant work experience in a computing role\*
* A diagnostic test will be taken by all applicants as part of the interview and recruitment process. The results from this will be used to identify support needs and chances of successful completion of the course.
* Those identified as requiring additional knowledge before starting the program of study will need to successfully complete the“Bridging to HE” course which includes open source operating system(s), programming and networking concepts.
* Students who are entering with an HNC qualification and industry experience will also be required to take this bridging course.
* APEL

Accreditation of prior experiential learning (APEL) can only be considered as part of entry requirements and not for units.

An appropriate format for the submission of evidence for accreditation would be -

* A statement of credit claimed
* A detailed curriculum vitae to provide a context for the claim
* A summary of the achievements (learning outcomes) claimed
* Detailed evidence supporting each of those achievements which demonstrates critical reflection, knowledge and skills acquired, a process of professional development and a capacity for autonomous study.

The basic criteria to be satisfied for the accreditation of prior experiential learning are:

1. The evidence is valid and reliable;
2. The evidence is sufficient to demonstrate the achievements claimed;
3. The evidence clearly indicates the applicant’s personal efforts and attainments;
4. That the achievements claimed are relevant to the award toward which it will count;
5. That the achievements are equivalent in depth and level to the successfully completed structured learning (ie courses/modules) for which equal credit is to be granted;
6. That the achievements can be authenticated by external referees.

A minimum IELTS score of 6 overall is required with no element being less than 5.5, or equivalent is required for those for whom English is not their first language.

1. **Programme Structure**

This course is offered in full-time or part-time modes, and leads to the award of BSc (Hons) Computing. Students will select one of two optional modules in either ‘Software Design and Development’ or ‘Routing, Switching and Security.’

**E1. Professional and Statutory Regulatory Bodies**

N/A

**E2. Work-based learning and work experience**

Work placements are actively encouraged - although it is the responsibility of individual students to source and secure such placements. This allows students to reflect upon their own personal experience of working in an applied setting. Students will focus on aspects of this experience in order to clearly understand theoretical concepts and to evaluate the relationship between theory and practice.

Students are responsible to find these themselves. NESCOT provides access to the REED centre on sight for students to apply for jobs and gain help with CV and application forms and interview practice.

Students will have the opportunity to carry out a real project for a company, which will allow students to develop interpersonal skills alongside technical skills and apply the methodologies, tools and techniques studied on the course.

**E3. Outline Programme Structure**

The course is made up of four modules, each worth 30 credit points. Students will be provided with the university regulations and specific additions that are sometimes required for accreditation by outside bodies (e.g. professional or statutory bodies that confer professional accreditation). Full details of each module will be provided in module descriptors and student module guides

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| **Level 6** (at least 60 credits = core) | | | | | | | | |
| **Compulsory modules** | **Module code** | **Credit**  **Value** | **Level** | **%**  **Written exam** | **% practical exam** | **%**  **course-work** | **Teaching Block** |  |
| Data Driven Web Application | CI6701 | 30 | 6 | 40 |  | 60 | 1 and 2 |  |
| Operating Systems and Computer Networks | CI6702 | 30 | 6 | 35 | 30 | 35 | 1 |  |
| Capstone Project | CI6703 | 30 | 6 |  |  | 100 | 1 and 2 |  |
| **Optional modules** |  |  |  |  |  |  |  | **Pre-requisites** |
| Software Design and Development | CI6704 | 30 | 6 | 50 |  | 50 | 2 | None |
| Routing, Switching and Security | CI6705 | 30 | 6 | 30 | 35 | 35 | 2 | CI6702 |
| Level 6 requires the completion of 3 compulsory modules and 1 optional module. | | | | | | | | |

1. **Principles of Teaching Learning and Assessment**

**Teaching**

The teaching team engage in circular learning to allow the students to re-visit and retain important knowledge, as well as apply new assessments and practices to existing knowledge. Throughout the course, emphasis is placed on formative assessment to support and develop students’ knowledge and skills related to Computing, prior to module summative assessments. The course commences with an induction programme that aims to familiarise students with each other, the course requirements, the college environment, policies and practices and academic writing conventions. Within induction there will be opportunities for students to meet the course team, their tutor and college support staff. This will enable early identification of support needs. In order to support students effectively, thorough, on-line initial assessments are undertaken in literacy and numeracy.

In order for students to experience a range of teaching strategies each module will involve a variety of methods depending on the learning outcomes, the needs of the students and the resources available. These strategies will include:

* Formal lectures:
  + Face-to-face
  + Video lectures selected by academic staff
  + Master classes from industry experts
* Computer workshops/laboratories:
  + Individual and Group work
  + Problem solving and other skill developing classes
  + Independent and guided learning from e-resources, texts and work books
  + Online e-learning forums andBlended learning
  + Use of Cisco, Microsoft and Oracle Academy materials
* Visits to outside organisations guest speakers, events such as Eurogamer and IPEXPO

Students are taught about research methods, interviewing, and how to distinguish between strong and weak evidence and argument, writing, decision-making and analytical skills. Methodologies, programming languages and current technologies and apply them to the practical issues that exist in the working environment.

Scheduled contact time is normally between the hours of 1.30 - 8.30pm. In general, subject material and corresponding methods and techniques are introduced in lectures; practical activities are regarded as essential to the understanding of the material and the development of relevant skills and are often used for giving formative feedback on assessment components. In addition to these there are daily drop-in sessions at the Learning Resource Centre (LRC) where support is provided on a one-to-one basis. The LRC also houses an independent HE learning suite.

Students are encouraged to develop as independent learners as they progress through the degree course, so typically the contact reduces. There is greater contact time at start of the year to provide initial academic support, leaving the remainder for self-directed or guided study time.

*Research Informed Teaching*

The course team is research active and the following areas are incorporated into the course design:

* Code Academy is an online programming environment that has emerged as the latest online learning system to follow in the footsteps of the O’Reilly School of Technology and the Netmath program at the University of Illinois, and create an opportunity for itself to take a pedagogical stand to improve the way we teach with technology. Targeted at those students who are new to programming or wish to improve their skill level, it provides an immersive learning experience in which practical exercises can be delivered in a stimulating, engaging fashion, with real-time feedback provided to the student as they work and progress at their own pace.
* Staff also engage with research into teaching and learning in Higher Education which feeds through to support learning in lectures and other forms of student engagement.

**Learning**

A practical approach enables students to build confidence and become motivated by experience. Students develop a wide range of practical skills such as creating and registering their own web-based applications, coding, troubleshooting and designing networks. The lectures and associated practical tasks are uploaded to our dedicated Virtual Learning Environment (VLE) providing the student with a permanent accessible resource.

In some of the modules students will develop systems as members of a team and as an individual. For example, in the Data-Driven Web Application module students are aided in developing their programming using various Integrated Development Environments (IDEs), tools and techniques. Students also work on client requirements and case studies.

For example, in the Advanced Networking modules students extend their understanding of networking and security by studying the Cisco CCNA vendor qualifications. Students are also exposed to Unified Threat Management by studying aspects of the curriculum for Cyberoam CCNSP and use simulation tools such as Packet Tracer and WireShark.

The Capstone Project is an individual piece of work which offers students the opportunity to integrate their cumulative academic studies and practical skills with a single project, which may be for a real client. Students are provided with opportunities to engage with the project from course induction to ensure adequate preparation for this substantial piece of work.

There are also ‘programming surgery’ sessions for students needing further help. Students also have access to Cisco Hardware Labs to practice and further develop skills.

Learning materials from Cisco Academy courses provide students with access to the very latest developments, and provide students with opportunities to work with these tools. Supplemented with lectures and seminars on key topics, a variety of teaching and learning strategies are deployed, coupled with a range of assessment strategies such as practical assessments, case studies and qualities examinations.

**Assessment**

The BSc Top up in Computing focuses on assessment across the range of writing and presentational genres. The depth and sophistication of student’s theoretical understanding is assessed, together with the student’s ability to effectively apply the skills acquired at levels 4 and 5 within computing employment contexts.

Assessment is an integral part of our learning and teaching strategy, with formative assessment used to provide timely feedback to aid students’ learning. Each module tutor’s feedback provided guidance to the student, helping them to prepare for the summative assessment. In addition, feedback highlights areas that students have performed well in and areas that need further development or research.

Formative assessment strategies and feedback opportunities include multiple choice assessments and short answer questions as well as presentation of group projects to a panel. Mock exams are designed to reinforce concept learning and build subject confidence; these may be delivered online as part of computer-aided assessment.

Other feedback opportunities are afforded during preparation for summative assessment for example, reviewing draft assignments by peers and/or tutor.

Within the project module, applied professional standards are covered where learners’ legal and ethical standards are signposted.

In the course as a whole, the following components are used in the assessment of the various modules:

* *Multiple choice or short an****s****wer questions:* to assess competence in basic techniques and understanding of concepts
* *Long answered structured questions* in coursework assignments: to assess ability to apply learned techniques to solve simple to medium problems and which may include a limited investigative component
* *Long answer structured questions* in end-of-module examinations: to assess overall breadth of knowledge and technical competence to provide concise and accurate solutions within restricted time
* *Practical exercises:* to assess students’ understanding and technical competence
* *Group-based case studies:* to assess ability to understand requirements, to provide solutions to realistic problems and to interact and work effectively with others as a contributing member of a team. The outcomes can be:
  + *Written report,* where the ability to communicate the relevant concepts, methods, results and conclusions effectively will be assessed.
  + *Oral presentation\VIVA,* where the ability to summarise accurately and communicate clearly the key points from the work in a brief presentation will be assessed.
  + *Poster presentation* where information and results must be succinct and eye-catching.

Key skills developed throughout the course form an integral part of an assessment.

1. **Support for Students and their Learning**

In order to assist students in achieving their learning outcomes, the BSc Course Coordinator uses the following initiatives to support undergraduate students in both academic and pastoral issues. These are summarised below, and include skills workshops that offer English language support, academic surgeries, detailed induction and orientation programmes at the start of the academic year, and subject-based conference style events. Advice on generic study skills is available on the electronic learning management system (Weblearn) to which all students have access; this includes advice on writing, oral communication, numeracy, problem-solving and career management, among others.

During their time at Nescot, Students also have access to the Learning Resource Centre, which provides a ‘drop in’ service giving advice on all non-subject based aspects of academic work including;

* grammar and punctuation,
* academic structure
* referencing and plagiarism
* mathematics skills

Students are encouraged to discuss academic and pastoral concerns with their supervisor, and all academic staff operate a system of Office Hours during which students can consult their lecturers.

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| **Summary of Student Support**   * A Module Leader for each module * A Course Co-ordinator to help students understand the programme structure, who also acts as Personal Tutor to provide academic and personal support * A designated programme administrator * An induction week at the beginning of each new academic year * Staff Student Consultative Committee * Weblearn – a versatile on-line interactive intranet and learning environment * A substantial Learning Resource Centre that provides academic skills support * Student support facilities that provide advice on issues such as finance, regulations, legal matters, accommodation, international student support etc. * Disabled student support |

Support for students continues outside of their lecture and project schedule. This support is primarily via email. The ‘forum’ facility on weblearn is also used to improve peer interaction and facilitate the sharing of best practice between students.

The students are introduced to all these staff and their roles during induction at the beginning of the new academic year.

Students are expected to be involved in the development of their course. On an individual level through meetings with their Personal Tutor at which they can discuss their academic progress, personal development and can seek advice on course and module choice in the light of their career aspirations. Students can expect to meet with their Course Coordinator at least once a term for this 30 minute tutorial.

Personal Development Planning (PDP) enhances and supports the experience of a student. Through PDP students review, build and reflect on their personal and educational development. The process encourages students to reflect on achievements in a structured way, identify goals and plan the next steps.

1. **Ensuring and Enhancing the Quality of the Course**

The University has several methods for evaluating and improving the quality and standards of its provision. These include:

* External examiners
* Boards of study with student representation
* Annual review and development
* Periodic review undertaken at the subject level
* Student evaluation
* Moderation policies
* Periodic Cisco Academy quality review visit
* The college will be fully compliant with Kingston University Regulations and Quality Assurance processes.

1. **Employability Statement**

Preparation for work is an integral part of the BSC Top Up in Computing. The programme has been designed to enable students to develop their employability skills to support progression and success in an expanding technology economy.

The course is designed in close partnership with employers, professional associations and practice specialists to ensure that the skills which students develop are relevant. The current academic staff teaching on the BSc program joined the College from a relevant industry or profession. Staff are continually developing their skills and expertise in the field of Computing by undertaking certification, attending vendor courses, seminars and creating links with industry.

The BSc Top Up in Computing gives students the opportunity to gain experience of working in a team to tackle appropriate development tasks. Students also undertake a Capstone Project to demonstrate their ability to undertake a substantial piece of work on a real topic provided by an employer.

The vocational aspect of the programme is emphasised in taught material, practical activities and work based placements and assessments. We operate a number of Vendor Academies such as Cisco, Cyberoam, Microsoft, Citrix, Oracle and Linux and SAP. The department has also established links with technology companies such as OPUS, BYTES, BIDATASK, GAMMA, SPEDI, and Cisilion to inform curriculum, provide work experience and progression into employment.

Students actively take part in regional and national World Skills competitions. Successful candidates have had the opportunity to represent Team GB, and previous competition finalists have been scouted by national and international companies.

Career planning is integral to the BSc Computing Top Up, and students build professional development portfolios during their study to take into employment. All students have access to guidance from our professional careers and employment service via REED, CV preparation and interview practice, an annual program of employer recruitment fairs, and an on-line graduate vacancy service.

Previous students are working at the highest levels of the industry in specialized consultancy or in exciting roles like Network Infrastructure Analysts, Security Analyst, Business Intelligence, Network and Database administrators, C# and Java Software Developers. Microsoft SQL Server and Oracle Database Administrators Mobile and web development and Help Desk support. The combination of NESCOT’s facilities with the industry knowledge and teaching excellence of our staff gives students the edge students need to succeed in the expanding sector.

1. **Approved Variants from the UR**

None

1. **Other sources of information that students may wish to consult**

QAA Subject Benchmark

<http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/computing07.pdf>

The review of the degree has been made with consideration of the published QAA benchmarks in Computing. The aims and objectives relate to modal and threshold standards indicated in the benchmarks. The cognate area provides students with the opportunity to study modules on a on a range of Computing topics, giving them an ability to span the field. The place and importance of specialist areas is, however, recognised through the provision of option pathways. Attention has been given to the progression routes and the background of applicants in the design of the course. Principles of course design specified in the benchmarks are reflected in the design, presentation and delivery of the course. The assessment programme is structured to include team working and the development of personal and transferable skills.

The result of this is fairly broadly based treatment focusing on: Software, and Communication and interaction, but also having regard to: Practice and Theory. For instance, the skills of problem identification and analysis, the process of design, development, testing and evaluation, the theory and application of algorithm design and analysis. In addition to the building of knowledge there is considerable practical emphasis and the development of transferable skills, for instance, the management of personal learning and organisational skills.

The use of virtual learning environments adds a new dimension to the existing provision by providing greater flexibility and effectiveness and this is recognised as an important factor in ensuring that students are appropriately motivated. The use of this style of learning also leads to improvements in the manner in which the students are assessed and this also improves motivation.

In regard to curricula the following areas will be specifically addressed:

* Computer communications
* Computer networks
* Security
* Concurrency and Parallelism
* Databases
* Data structures and algorithms
* Distributed computer systems
* Gaming
* Middleware
* Multimedia
* Operating systems
* Programming fundamentals
* Software engineering
* Systems analysis and design

The Chartered Institute for IT

<http://www.bcs.org/>

SAP University Alliances Community

<http://global.sap.com/corporate-en/our-company/university-alliances/index.epx>

*The Code Academy*

<http://www.codecademy.com/>

*Cisco Networking Academy*

<https://cisco.netacad.com/>

*Oracle Academy*

<https://academy.oracle.com/oa-web-overview.html>

*Microsoft Academy*

<http://www.microsoft.com/education/itacademy/Pages/index.aspx>

*Linux Professional Institute*

<http://www.lpi.org/partnerships/academy>

*ACM*

<http://www.acm.org/>

**Development of Course Learning Outcomes in Modules**

This map identifies where the course learning outcomes are assessed across the modules for this course. It provides an aid to academic staff in understanding how individual modules contribute to the course aims, and a means to help students monitor their own learning, personal and professional development as the course progresses and a checklist for quality assurance purposes. Include both core and option modules.

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|  |  |  | | **Level 6** | | | | |
|  | **Module Code** | |  | CI6701 | CI6702 | CI6703 | CI6704 | CI6705 |
| **Course Learning Outcomes** | **Knowledge & Understanding** | | A1 | S/F | S/F | S/F | S/F | S/F |
| A2 | S | S | S/F | S/F | S/F |
| A3 | S |  | S/F | S/F | S/F |
| A4 | S |  | S/F | F | S/F |
| **Intellectual Skills** | | B1 | S/F | S/F | S/F | S/F | S/F |
| B2 | S/F | S/F | S/F | S/F | S/F |
| B3 | S/F | S/F | S/F | S/F | S/F |
| B4 | S | S | S/F | S/F | S/F |
| **Practical Skills** | | C1 | S/F | S | S/F | S/F | S/F |
| C2 | S/F | S | S/F | S/F | S/F |
| C3 | F | S/F | S/F | S/F | S/F |
| C4 | S/F | S/F | S/F | S/F | S/F |
| **Self Awareness skills** | | AK1 | S/F | S/F | S/F | S/F | S/F |
| AK2 | S/F | S/F | S/F | S/F | S/F |
| AK3 | S/F | S/F | S/F | S/F | S/F |
| AK4 | S/F | S/F | S/F | S/F | S/F |
| **Communication skills** | | BK1 | S/F | S/F | S/F | S/F | S/F |
| BK2 | S/F | S/F | S/F | S/F | S/F |
| BK3 | S/F | S/F | S/F | S/F | S/F |
| **Interpersonal skills** | | CK1 | S/F | F | F | F | F |
| CK2 | S/F | S/F | S/F | S/F | S/F |
| CK3 | S/F | S/F | S/F | S/F | S/F |
| CK4 | S/F | S/F | S/F | S/F | S/F |
| CK5 | S/F | S/F | S/F | S/F | S/F |
| **Research and Information literacy skills** | | DK1 | S/F | S/F | S/F | S/F | S/F |
| DK2 | S/F | S/F | S/F | S/F | S/F |
| DK3 | F | F | S/F | F | S/F |
| DK4 | S/F | S/F | S/F | S/F | S/F |
| DK5 | S/F | S/F | S/F | S/F | S/F |
|  | **Numeracy skills** | | EK1 | F | F | S/F | F | F |
| EK 2 | S/F |  | S/F |  |  |
| EK3 | S/F |  | S/F |  | S/F |
| EK4 | S/F |  | S/F |  |  |
| **Management and leadership skills** | | FK1 | S/F |  | S/F |  |  |
| FK2 | S/F | S/F | S/F | S/F | S/F |
| FK3 | S/F |  | S/F |  |  |
| FK4 | S/F | S/F | S/F | S/F | S/F |
| **Creativity and Problem solving skills** | | GK1 | S/F |  | S/F |  |  |
| GK2 | S/F | S/F | S/F | S/F | S/F |

**S**  indicates where a summative assessment occurs.

**F** where formative assessment/feedback occurs.

**Indicative Module Assessment Map**

This map identifies the elements of assessment for each module. Course teams are reminded that:

* There should be no more than three elements of assessment per module
* There should be no more than one formal examination per module.
* Synoptic assessments that test the learning outcomes of more than one module are permitted

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Module** | | | | | **Coursework** | | | | **Examination** | | | | |
| **Level** | **Module Name** | **Module code** | **Credit value** | **Core/**  **option** | **Type of coursework** | **Word Length** | **Weighting %** | **S/F** | **Written** | **Practical** | **Duration** | **Weighting %** | **S/F** |
| 6 | Data Driven Web Application | CI6701 | 30 | Core | Group presentation ; in-class tests and practical tasks; | 2000 | 60 | F/S | 3 hour |  | 3h | 40 | S |
| 6 | Operating Systems and Computer Networks | CI6702 | 30 | Core | In-class tests; practical exercises; individual assignment. | 3000 | 35 | F/S | 3 hour | 3 hour | 6h | 65 | S |
| 6 | Capstone Project | CI6703 | 30 | Core | Poster, Major Project Report & Prototype | 9000 | 90% | S/F | VIVA\* |  | 30 mins | 10% | S |
| 6 | Software Design and Development | CI6704 | 30 | Option | Mini project; in-class tests; practical exercises; | 3000 | 50 | F/S | 3 hour |  | 3h | 50 | S |
| 6 | Routing, Switching and Security\*\* | CI6705 | 30 | Option | In-class tests; practical exercises; individual assignment. | 3000 | 35% | F/S | 3 hour | 3 hour | 6h | 65 | S |

**Technical Annex**

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| **Final Award(s):** | *BSc (Hons) Computing* |
| **Intermediate Award(s):** | *BSc Computing (Ordinary degree)* |
| **Minimum period of registration:** | *1* |
| **Maximum period of registration:** | *3* |
| **FHEQ Level for the Final Award:** | *6* |
| **QAA Subject Benchmark:** | Computing (March 2007) 2nd Edition  Framework for Higher Education Qualifications in England, Wales and Northern Ireland (2008) |
| **Modes of Delivery:** | *Full time & Part-time* |
| **Language of Delivery:** | *English* |
| **Faculty:** |  |
| **School:** |  |
| **JACS code:** | *This is the* [*Joint Academic Coding System*](http://www.qaa.ac.uk/WorkWithUs/Documents/jacs_codes.pdf) *(JACS) agreed jointly by UCAS and HESA.* |
| **UCAS Code:** | *G402* |
| **Course Code:** |  |
| **Route Code:** |  |
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