

The wording, at the end of Section 4 and within Section 11, in (i) and (ii) is subject to confirmation by BCS.



## Programme Specification

With effect from: **September 2022**

A programme specification is the definitive record of your programme of study at the University. It sets out the aims, learning outcomes, and indicative content of the programme. You should read this programme specification alongside the relevant module descriptors and the University's Taught Programme Academic Regulations.

This specification only applies to the delivery of the programme indicated below. The details in this specification are subject to change through modifications or periodic review processes.

### 1 Programme name and award

**This programme specification relates to the following award(s)**

BSc (Hons) Computer Science

### 2 Aims of the programme

#### Rationale and general aims, including what is special about this programme

The BSc (Hons) Computer Science programme prepares graduates for a dynamic and fast-developing sector. You will learn the traditional aspects of computer science, but these are set within the context of flexible and agile work environments. Leeds is a leading centre for tech businesses and the programme has been designed and is supported by a range of local providers, creating a powerful focus on current and future developments, and on preparing highly employable graduates.

The programme aims are to:

- Acquire a solid knowledge and understanding of the main areas in the field of computer science that are required in a wide range of professions;
- Acquire understanding of, and experience of working with, the latest developments in software technologies, programming concepts, and commercial work practices and methods;
- Develop an understanding of project-based work in a dynamic and ever-changing work environment and to develop the skills and attributes that enable graduates to thrive in such contexts;
- Develop the ability to think critically and independently, whether working as an individual or as a member of a team;

- Develop a range of transferable skills appropriate to graduate-level employment, both through academic project work and through professional placements.

### 3 Level Learning Outcomes and Employability Outcomes

Learning outcomes are expressed in terms of:

- Knowledge and understanding (K)
- Intellectual / cognitive / 'thinking' skills (I)
- Practical skills specific to the subject (P)
- Employability skills (E)

We design assessment tasks to enable you to demonstrate the Level Learning Outcomes and relevant Employability Outcomes for your level of study. To a greater or lesser extent, all Level Learning Outcomes at each level of your study are embedded in the assessment task(s) at that level. This means we can take a more integrated view of your overall performance at a level.

To progress to the next level, or to receive an award, you will need to satisfy the Level Learning Outcomes below and relevant Employability Outcomes and achieve credit as per the Taught Programme Academic Regulations. **For students studying at Leeds Trinity campus, there are variations to the Taught Programme Academic Regulations, as required by the accrediting body, and these variations are contained within Additional Regulations.**

Level Learning Outcomes	
Level 4	
K1	<b>Subject knowledge</b> - knowledge and understanding of the subject of computing and computer applications. This includes relevant academic and professional standards and commercial contexts as required to practise in the field of computer science
K2	<b>Currency of knowledge</b> – knowledge and understanding of a range of standard and emergent technologies, programming tools and methodologies, computational thinking and problem-solving strategies and techniques
K3	<b>Contextual knowledge</b> - knowledge of a range of issues (moral and ethical, legal, social, environmental and commercial) relevant to professional practice in the computer science sector
K4	<b>Commercial understanding</b> – knowledge of the nature, purposes, structures, governance, and activities of computer science-related organisations, including the importance of customer needs, services, and relations, as well as orientation to marketing functions, and the Agile organisational methods and procedures required to address those functions
I1	<b>Problem-solving</b> - the ability to identify and use problem-solving techniques to satisfy a set of given requirements, as an individual and within a team
I2	<b>Research</b> - the ability to conduct research to support the nature of software development, including the specification, design, and development processes within the Agile perspective of knowledge and understanding

I3	<b>Critical perspective</b> – the ability to use appropriate strategies to tackle computing problems, guided by theoretical understanding of the subject area
P1	<b>Technical proficiency</b> – the ability to use analytical techniques, design methodologies, programming tools, and deployment of the construction and documentation of software applications through individual and group-based activities
P2	<b>Agile project management</b> – the ability to solve problems, either independently or in teams through the practical use of Agile methodology in the design and delivery of products to pre-agreed specifications; seek, and make use of, feedback, from various sources
<b>Level 5</b>	
K1	<b>Subject knowledge</b> - coherent and detailed knowledge and understanding of the theories in the subject of computing and computer applications. This includes relevant academic and professional standards, in the business and commercial contexts as required to practise in the field of computer science
K2	<b>Currency of knowledge</b> – professional understanding of a range of standard and emergent technologies in breadth and depth, programming tools and methodologies, computational thinking and problem-solving strategies and techniques
K3	<b>Contextual knowledge</b> – the application of coherent and detailed knowledge of a range of issues (moral and ethical, legal, social, environmental, and commercial) relevant to professional practice in the computer science sector
K4	<b>Commercial understanding</b> – the application of knowledge and understanding of the nature, purposes, structures, governance, and activities of computer science-related organisations, including the importance of customer needs, services, and relations, as well as orientation to marketing functions, and the Agile organisational methods and procedures required to address those functions
I1	<b>Problem-solving</b> - the ability to accurately identify and apply problem-solving techniques to computing requirements, as an individual and within a team
I2	<b>Research</b> – the ability to conduct research to demonstrate understanding of the nature of software development, including the specification, design, and development processes within the Agile perspective of knowledge, and understanding
I3	<b>Critical perspective</b> – the application of appropriate strategies to tackle complex computing problems, guided by a theoretical understanding of the subject area
P1	<b>Technical proficiency</b> – the ability to produce work evidencing secure use of analytical techniques, design methodologies, programming tools, and effective deployment of the construction and documentation of software applications through individual and group-based activities
P2	<b>Agile project management</b> – the ability to solve complex problems, either independently or in teams through the practical use of Agile methodology in the design and delivery of products to pre-agreed, and to dynamic and evolving, specifications; seek, and make use of, feedback, from various sources

Level 6	
K1	<b>Subject knowledge</b> - critical understanding and evaluation of the subject of computing and computer applications. This includes relevant academic and professional standards and commercial contexts as required to practise in the field of computer science
K2	<b>Currency of knowledge</b> – critical and professional understanding and evaluation of a range of standard and emergent technologies, programming tools and methodologies, computational thinking and problem-solving strategies and techniques
K3	<b>Contextual knowledge</b> – critical understanding and evaluation of a range of issues (moral and ethical, legal, social, environmental and commercial) relevant to professional practice in the computer science sector
K4	<b>Commercial understanding</b> – critical evaluation and analysis of the nature, purposes, structures, governance and activities of computer science-related organisations, including the importance of customer needs, services and relations, as well as orientation to marketing functions, and the Agile organisational methods and procedures required to address those functions
I1	<b>Problem-solving</b> - the ability to critically evaluate and select problem-solving techniques to computing requirements, as an individual and within a team
I2	<b>Research</b> – the ability to conduct research to critically evaluate and analyse software development steps including specification, design, and secure development processes within the Agile perspective of knowledge and understanding
I3	<b>Critical perspective</b> – the ability to critically appraise and apply appropriate strategies to tackle complex computing problems, guided by a theoretical understanding of the subject area
P1	<b>Technical proficiency</b> – the ability to produce work evidencing secure and effective use of analytical techniques, design methodologies, programming tools; consider and evaluate deployment pattern of the construction and documentation of software applications, independently
P2	<b>Agile project management</b> – the ability to solve complex problems and critically evaluate various approaches, independently through the practical use of Agile methodology in the design and delivery of products to pre-agreed, and to dynamic and evolving, specifications; seek, and make use of, feedback, from various sources

Employability Outcomes	
Employability skills are embedded and assessed throughout your programme. Therefore, we use a generic set of employability outcomes at all levels of study.	
E1	<b>Self-management</b> – the ability to plan and manage time; readiness to accept responsibility and improve their own performance based on feedback/reflective learning; the ability to take initiative and be proactive,

E2	<b>Team-working</b> – the ability to co-operate with others on a shared task and to recognise and take on appropriate team roles; leading, contributing to discussions and negotiating; contributing to discussions; awareness of interdependence with others;
E3	<b>Business and sector awareness</b> – an understanding of the key drivers for business success, including the importance of customer/client satisfaction and innovation; understanding of the market/sector in which an organisation operates; the ability to recognise the external context and pressures on an organisation, including concepts such as value for money, profitability and sustainability;
E4	<b>Problem-solving</b> – a capacity for critical reasoning, analysis and synthesis; a capacity for applying knowledge in practice; an ability to retrieve, analyse and evaluate information from different sources;
E5	<b>Communication</b> – the ability to present information clearly and appropriately, both orally and in writing, and to tailor messages to specific audiences and purposes;
E6	<b>Application of numeracy</b> – a general awareness of mathematics and its application in practical contexts; the ability to carry out arithmetic operations and understand data, to read and interpret graphs and tables and to manage a budget;
E7	<b>Application of information technology</b> – the ability to identify and use the appropriate IT package for a given task; familiarity with word-processing, spreadsheets and file management; the ability to use the internet and email effectively;
E8	<b>Entrepreneurship/enterprise</b> – the ability to demonstrate an innovative approach and creativity, to generate ideas and to identify and take opportunities;
E9	<b>Social, cultural &amp; civic awareness</b> – embracement of an ethos of community and civic responsibility; an appreciation of diversity and ethical issues; an understanding of cultures and customs in the wider community.

## 4 External Benchmarks

### Statement of congruence with the relevant external benchmarks

All Leeds Trinity University programmes are congruent with the Frameworks for HE Qualifications (FHEQ) and, where appropriate, the Qualifications and Credit Framework (QCF) (formerly the National Qualifications Framework (NQF)).

The Computer Science programme is congruent with the most recent QAA Benchmark Statement for Computing (2022).

**For students studying at the Leeds Trinity campus**, the programme is accredited by BCS, The Chartered Institute for IT (i) for the purposes of fully meeting the academic requirement for registration as a Chartered IT Professional (ii) on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for Incorporated Engineer and partially meeting the academic requirement for a Chartered Engineer.

### Summary of content by theme

The BSc Hons Computer Science programme enables you to develop discipline-specific skills in four key areas: software development; organisational processes; professional experience; and collaborative professional project work. The programme is designed to deliver these skills through vertical strands that provide a means of developing skills and knowledge in each of these areas across all three years of undergraduate study. The programme is also designed to allow you the opportunity to gain specialist skills and knowledge in several emerging fields.

At all Levels you will engage in collaborative professional project work which has the function of integrating the content of all the other non-placement modules at that Level. At all Levels the core knowledge and skills-based learning gained on non-placement modules flow into collaborative practice, which, in turn, equips and prepares you for professional experience.

In order to achieve this, the collaborative project work which forms the basis of the COM4025 *Team Project* and COM5033 *Team Project* modules takes place exclusively in Semester 2 and is followed by the professional project challenge or placement. At Level 6 the COM6023 Project module spans both semesters but with the expectation that most of the practical work will take place in Semester 2.

In addition to this, the programme has a progressive and convergent structure that establishes core disciplines in the first year and then synthesises them in the second year in order to equip and prepare students for the project work in the final year. The COM6023 Project module is the capstone of the programme in which students integrate their learning across past modules, including elected specialist modules. It is more than a typical final year project in that it demands continuous engagement with peers and an employer mentor, along with the ability to apply practical and theoretical knowledge in a professional context.

## 6 Programme Structure

Programme Structure – BSc (Hons) Computer Science			
Duration	3 years full-time		
Total credit rating	360 (180 ECTS)		
Level 4 – With effect from: September 2022			
Core: You are required to take the following modules			
Module Code	Module Title	Semester	Credits
COM4015	Technology in Business	1	15
COM4025	Team Project (Employer-led)	2	15
COM4043	Computing Skills and Employability	1&2	30
COM4003	Introduction to Tech Stack	1&2	30
COM4013	Introduction to Software Development	1&2	30
Level 5 – With effect from: September 2020			
Core: You are required to take the following modules			
Module Code	Module Title	Semester	Credits
COM5003	Further Software Development	1&2	30
COM5013	User-Centred Design	1&2	30
COM5023	Professional Development and Placement	1&2	30
COM5033	Team Project	1&2	30
Level 6 – With effect from: January 2020			
Core: You are required to take the following modules			
Module Code	Module Title	Semester	Credits
COM6003	Secure Development and Deployment	1	30
COM6023	Project	1&2	30
Options: You are required to choose 30 credits in Semester 1 from the following modules			
COM6033	Applied Artificial Intelligence	1	30
COM6053	Data Science for Business	1	30
Options: You are required to choose 30 credits in Semester 2 from the following modules			
Module Code	Module Title	Semester	Credits
COM6013	Cyber Security	2	30
COM6043	Audio Visual Programming	2	30



## 7 Pre-requisites

**Modules students must study and achieve credit for before enrolling on a module at a higher level, or attaining their final programme award**

N/A

## 8 Learning, Teaching and Assessment

The University's Learning, Teaching and Assessment Strategy informs the design of your programme. You can find more information about learning, teaching and assessment for your programme (including information on Integrated Assessment) within the relevant Assessment Handbooks.

## 9 Entry requirements

<b>Do the University's standard entry requirements apply?</b>	Yes
<b>Detail of any deviation from and/or addition to the University's standard entry requirements (if applicable), e.g. English Language or English Literature requirement</b>	N/A

## 10 Additional support needs

Students with disabilities or other support needs are welcome and are expected to be able to participate fully in this programme. Arrangements will be made, via the normal University support systems, to accommodate students with additional support needs wherever possible, with reasonable adjustments made to accommodate individual needs.

**Programme-specific requirements / unavoidable restrictions on participation in the programme**

N/A

## 11 Technical Information

<b>Awarding Body / Institution</b>	<b>Leeds Trinity University</b>
<b>Teaching institution</b>	<b>Leeds Trinity University</b>
<b>Parent Faculty</b>	<b>BCDI</b>
<b>School</b>	<b>Computer Science</b>



<b>Professional accreditation body</b>	<b>BCS CITP</b> <b>BCS Partial CEng</b> <b>(The above apply solely to students studying at the Leeds Trinity campus.)</b> <b>(For students studying at the Leeds Trinity campus, the programme is accredited by BCS, The Chartered Institute for IT (i) for the purposes of fully meeting the academic requirement for registration as a Chartered IT Professional (ii) on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for Incorporated Engineer and partially meeting the academic requirement for a Chartered Engineer.</b> <b>For students studying at Leeds Trinity campus, there are variations to the Taught Programme Academic Regulations, as required by the accrediting body, and these variations are contained within Additional Regulations.)</b>
<b>Final award</b>	<b>BSc (Hons)</b>
<b>Title of programme(s)</b>	<b>Computer Science</b>
<b>Subsidiary award(s)</b>	<b>Certificate of Higher Education in Computer Science/Diploma of Higher Education in Computer Science/Ordinary Degree in Computer Science</b>
<b>Honours type</b>	<b>Single</b>
<b>Duration and mode(s) of study</b>	<b>3 years full-time</b>
<b>Month/year of approval of programme</b>	<b>April 2022</b>
<b>Periodic review due date</b>	<b>As scheduled</b>
<b>HECoS subject code(s)</b>	<b>100366</b>
<b>UCAS course code(s)</b>	<b>COMPSCI</b>
<b>SITS route codes</b>	<b>COMPSCI / UGBSN</b>
<b>Delivery venue(s)</b>	<b>LTU</b> <b>BAC International Study Centre, Bangladesh</b> <b>Waltham International College</b>

## 12 Level Learning Outcomes and Employability Outcomes (LLO)

The grids below demonstrate where Level Learning Outcomes and Employability Outcomes are assessed at module level and ensure that students are assessed in all Level Learning Outcomes at each level of their study. Students might not be assessed in all Employability Outcomes at each level of study. However, all Employability Outcomes will have been assessed by the end the programme.

LLOs for Level 4	Assessed learning outcomes of the programme									Skills development								
<i>Adjust LO codes as necessary. ↓</i>	K1	K2	K3	K4	I1	I2	I3	P1	P2	E1	E2	E3	E4	E5	E6	E7	E8	E9
Lighter or hatched shading indicates modules that are not core, ie. not all students on this programme will undertake these.	Subject Knowledge	Knowledge Currency	Contextual Knowledge	Commercial Understanding	Problem Solving	Research	Critical Perspective	Technical Proficiency	Agile Project Management	Self-management	Teamworking	Business & sector awareness	Problem-solving	Communication	Application of numeracy	Application of IT	Entrepreneurship / enterprise	Social, cultural & civic awareness
<b>COM4003</b> Introduction to Tech Stack																		
<b>COM4013</b> Introduction to Software Development																		
<b>COM4015</b> Technology in Business								For BAC only										
<b>COM4025</b> Team Project (Employer-led)																		
<b>COM4043</b> Computing Skills and Employability																		

LLOs for Level 5	Assessed learning outcomes of the programme									Skills development								
<i>Adjust LO codes as necessary. ↓</i>	K1	K2	K3	K4	I1	I2	I3	P1	P2	E1	E2	E3	E4	E5	E6	E7	E8	E9
Lighter or hatched shading indicates modules that are not core, ie. not all students on this programme will undertake these.	Subject Knowledge	Knowledge Currency	Contextual Knowledge	Commercial Understanding	Problem Solving	Research	Critical Perspective	Technical Proficiency	Agile Project Management	Self-management	Teamworking	Business & sector awareness	Problem-solving	Communication	Application of numeracy	Application of IT	Entrepreneurship / enterprise	Social, cultural & civic awareness
<b>COM5003</b> <b>Further Software Development and Delivery</b>																		
<b>COM5013</b> <b>User-Centred Design</b>																		
<b>COM5023</b> <b>Professional Development and Placement</b>																		
<b>COM5033</b> <b>Team Project</b>																		

LLOs for Level 6	Assessed learning outcomes of the programme									Skills development								
<i>Adjust LO codes as necessary. ↓</i>	K1	K2	K3	K4	I1	I2	I3	P1	P2	E1	E2	E3	E4	E5	E6	E7	E8	E9
Lighter or hatched shading indicates modules that are not core, ie. not all students on this programme will undertake these.	Subject Knowledge	Knowledge Currency	Contextual Knowledge	Commercial Understanding	Problem Solving	Research	Critical Perspective	Technical Proficiency	Agile Project Management	Self-management	Teamworking	Business & sector awareness	Problem-solving	Communication	Application of numeracy	Application of IT	Entrepreneurship / enterprise	Social, cultural & civic awareness
<b>COM6003 Secure Development and Deployment (core)</b>																		
<b>COM6023 Project (core)</b>																		
<b>COM6033 Applied Artificial Intelligence (option Sem 1)</b>																		
<b>COM6053 Data Science for Business (option Sem 1)</b>																		
<b>COM6013 Cyber Security (option Sem 2)</b>																		
<b>COM6043 Audio Visual Programming (option Sem 2)</b>																		