Partnered with

The Knowledge Hub Universities
Egypt

Course Specification A

BSc (Hons) Computer Science

TKHU024

School of Computing

Academic Year: 2025/2026

PART A.1 Course Specification

BSc Computer Science

1. Introduction

This document outlines level 3 of the BSc in Computer Science and should be considered along with Part A.2 Computer Science document.

Computer Science Level 3

Level 3 course will normally introduce prospective students where English is not their first language to the key concepts in Computer Science as well as the academic study skills and language they will need to operate effectively at degree level. Successful completion of the Level 3 will enable progression to Level 4 of the BSc Computer Science Course. Level 3 consists of 80 credits of subject-specific modules and 40 credits of academic English skills modules. The course will be fully taught in English with embedded specialist English-language and study skills to support students in their further undergraduate study in Coventry University degree courses.

Overall Aims of Level 3

The Level 3 will enable students to:
- Become familiar with the key concepts in Computer Science.
- Develop the language and subject-specific academic study skills necessary to study at university level.
- Manage their own learning and acquire transferable skills such as communication, initiative and problem solving that equips and orientates students for higher education.

There is a global shortage of engineers, computing scientists and construction professionals and employment opportunities remain extremely buoyant.

The course is designed to foster a critical, analytical and experiential approach to embedded study skills and subject-specific academic English. The course supports students towards informed career choices, with awareness of their own strengths and knowledge of career pathways. Successful completion of this year will enable progression to year 2 (Level 4) of the BSc Computer Science Course.

This year aims to develop knowledge and skills that can be applied to solving scientific problems. The educational experience also aims to develop students' intellectual and personal skills. The course has equal proportions of applied science and engineering (40 credits), mathematics (40 credits) and English language (40 credits).

The mathematics modules cover algebra, descriptive and inferential statistics, trigonometry, vectors and vector operations, differential and integral calculus, some simple solution methods for various types of differential equations and methods to characterise and handle uncertainty. The Applied Science and Engineering modules aim to develop the student's working knowledge of the scientific theories that underpin the engineering disciplines. The first develops students' scientific knowledge and laboratory skills. The second module develops the theory and introduces the application of theory through the use of design, including the concept of prototyping and the use of computer aided design.

2 Outline and Educational Aims of the Course

The Level 3 in BSc Computer Science is designed to provide an introduction to relevant mathematic concepts and scientific theories and their application in the design of scientific solutions.

Successful completion of the course enables progression to Level 4 of the BSc Computer Science Course.

The course will be fully taught and assessed in English with embedded specialist English-language and study skills support.

The level 3 year of study forms part of the BSc in Computer Science Course.

Coventry University Level 3: General Course Aims:

Level 3 will enable students to:

- Become familiar with the key concepts in their chosen subject area.
- Develop the language and subject-specific academic study skills necessary to study at university level.
- Manage their own learning and acquire transferable skills such as communication, initiative and problem solving that equips and orientates students for higher education.

Computer Science Level 3 - Specific Course Aims:

Level 3 in Computer Science aims to provide students with a firm basis for onward study in this bachelor degree and develop knowledge and skills that can be applied to solving scientific problems. The educational experience also aims to develop students' intellectual and personal skills.

It provides opportunities for students to:

- Acquire a broad knowledge of mathematical concepts and physical science theories relevant to science and its' technological, environmental, cultural, economic and social context;
- Develop practical skills appropriate to Computer Science;
- Strengthen study skills and academic English language skills, specific to the subject areas;
- Become an independent learner and acquire transferable skills such as communication, presentation, visual and digital fluency, critical reflection, initiative and problem solving;
- Recognise and respond appropriately to ethical values, the public interest and professional standards;
- Develop appropriate skills, understanding and experience to prepare students for successful transition into further and higher education in Computer Science.

3 Course Learning Outcomes

A student who successfully completes the course will have achieved the following learning outcomes and be able to:

1. demonstrate an understanding of the relevant mathematical and scientific principles;
2. apply fundamental design and analysis methods to investigate and propose solutions to scientific problems;
3. apply knowledge of physical sciences to computing issues;
4. apply the necessary study and research skills in support of written, oral and group assessments;
5. contribute effectively to a team and implement the necessary planning to achieve objectives;
6. clearly communicate research, concepts, solutions and recommendations.

4 Course Structure and Requirements, Levels, Modules, Credits and Awards

Level 3 of the BSc in Computer Science.

Modules within level 3 of the course and their credit value is identified in Table 1a. All modules are mandatory.

Table 1a: Module structure for Level 3

Module Credit Level	Module Code	Module Title	Credit Value	Course Learning Outcomes	Semester
3	KH3123CEM	Applicable Mathematics	20	1,2	1
3	KH3125EXQ	Foundation Physics	20	1,2,3	1
3	KH3111HUM	Foundation Academic English 1 for Engineering and Computing	20	4,5,6	1
3	KH3129CEM	Applied and Computational Mathematics	20	1,2	2
3	KH3126EXQ	Applied Science and Engineering	20	1,2,3	2
3	KH3112HUM	Foundation Academic English 2 for Engineering and Computing	20	4,5,6	2

Progression to level 4 BSc Computer Science
To progress to Level 4 of the BSc in Computer Science degree, a student must have passed or been credited with **all** the modules.

5 Criteria for Admission and Selection Procedure

1 AS Level grade D and 5 GCSEs (including English Language, Mathematics and Science) at A*- C or 9 - 4 in the new GSCE grading structure **OR** 8 GCSEs (including English Language, Mathematics and Science) at A*- C or 9 - 4 in the new GSCE grading structure) **OR** Tawjihiya/General Secondary School certificate with minimum 60% **OR** Pass grades in IB Diploma.

In the case of applicants whose first language is not English, an adequate proficiency in English must be demonstrated. This would normally be a minimum IELTS score of 5.5 (with no less than 5.0 in each component) or equivalent.

All equivalent qualifications are welcome, as are mature students with alternative experience.

BSc Computer Science

This document outlines level 4, 5 and 6 of the BSc Computer Science, and should be considered along with Part A.1 Computer Science document.

Computer Science is changing the world. Whether you see your future self as an app developer, a systems administrator, or an information technology specialist, our Computer Science course equips you with all the knowledge and skills you'll need to help drive the ongoing digital revolution.

- Master the practical skills and theoretical knowledge you need to develop software solutions which address demanding user expectations and complex customer requirements.
- Explore fascinating fields such as artificial intelligence, parallel programming, and data science, and learn how these areas continue to drive major changes in the domain of computer science.
- Gain industry-relevant experience as you apply real-world, commercial software development practices within teams of your peers.
- Develop the technical skills needed for a career in the computing industry, whether these are established ones such as software development and database maintenance, or emerging fields in data science, machine learning or security. The transferable skills learned on a computer science degree also equip you for a wide range of other careers.

Key Themes

The course has several key themes centred on computational thinking, by which we mean the ability to develop and understand algorithmic solutions to problems. This is backed up by the practical skill of programming developed in a variety of relevant languages chosen to complement each other and show the spectrum of techniques and tools available. Students will learn about the underlying architecture that supports computation, both the traditional computer and the new cloud based computation infrastructure which is increasingly prevalent.

The course includes a key theme of data science where students work with (potentially very large) datasets, learning the appropriate storage, software and statistical techniques. Students will experience how all the previous skills should be combined in the development of an entire product, including the modern tools used in industry such as version control and automated unit testing; the methodologies and design techniques which support such development; and the ethical, social and legal considerations required in such development. Through the study of the above students will also development important degree level transferable skills including both group and individual work, time management, written and verbal presentation to both experts and non-experts, and critical reflection on their own and others work.

At Levels 4 and 5 students study a suite of mandatory modules that cover the topics above and give an essential grounding in Computer Science. At Level 6 students take specialist modules in two of the most important emerging topics of computer science: machine learning and security. These are supplemented by a choice of two optional modules from a choice of four covering mobile app development, web API development, parallel programming, and advanced programming paradigms. In all cases students undertake an individual research project at Level 6, under the supervision of an academic member of staff.

2 Available Award(s) and Modes of Study

Title of Award	Mode of attendance		FHEQ Level
BSc (Hons) Computer Science	3 Years FT		6
Fall-back:			
BSc Computer Science	Fall-back		6
Diploma of Higher Education Computing	Fall-back		5

Certificate of Higher Education Computing	Fall-back			4	

3 Awarding Institution/ Body	Coventry University
4 Collaboration	Autonomous Franchise
5 Teaching Institution and Location of delivery	Coventry University Branch at TKH The Knowledge Hub Universities Campus New Administrative Capital, Residential Area 7, R7, Cairo Governorate
6 Internal Approval/ Review Dates	Latest review: 03/2019 Date for next review: 2026/2027
7 Course Accredited	N/A
8 Accreditation Date and Duration	N/A
9 QAA Subject Benchmark Statement(s) and/or other external factors	Quality Assurance Agency for Higher Education (QAA) Computing Benchmark Statement.
DBS requirement	N/A
10 Date of Course Specification	May 2023
11 Course Director	TBC

13 Outline and Educational Aims of the Course

The main educational aim of the BSc course is for students to acquire knowledge, skills and experience in the theory and practice of computer science as required in a wide range of professions. This includes practical abilities in particular the ability to write code in a high level programming language but also the use of appropriate software and technology such as database systems and version control systems. It includes the core knowledge of the field ranging from how the modern computer and computing infrastructure works to what the limits of computation are.

More specific aims of the course are to:
- gain fundamental understanding of subject areas in the field, knowledge of emergent technologies and the latest tools and techniques.
- develop transferable skills such as critical reflection, clear communication, the ability to work as part of a team, and independent and creative thought.
- acquire transferable and professional skills through projects in preparation for employment in industry, business or education.
- acquire additional skills, such as independent and creative thinking, to pursue further studies and research.

14 Course Learning Outcomes

On successful completion of the BSc course a student will be able to:

B1. **COMPUTATIONAL THINKING:**
develop and understand algorithms to solve problems; measure and optimise algorithm complexity; appreciate the limits of what may be done algorithmically in reasonable time or at all.

B2. **PROGRAMMING:**
create working solutions to a variety of computational and real world problems using an appropriate programming language (or languages) for the task.

B3. **ARCHITECTURE & SECURITY:**
understand the underlying architecture that supports the modern computer, including both traditional operating systems and modern internet based infrastructure, with a focus on maintaining their security.

B4. **DATA SCIENCE:**
work with (potentially large) datasets; using appropriate storage technology; applying statistical analysis to draw meaningful conclusions; and using modern machine learning tools to discover hidden patterns.

B5. **SOFTWARE DEVELOPMENT**:
develop a product from the initial stage of requirement / analysis all the way through development to its final stages of testing / evaluation.

B6. **PROFESSIONAL PRACTICE**:
understand professional practices of the modern IT industry which include those technical (e.g. version control / automated testing) but also social, ethical & legal responsibilities.

B7. **TRANSFERABLE SKILLS:**
apply a wide variety of degree level transferable skills including time management, team working, written and verbal presentation to both experts and non-experts, and critical reflection on own and others work.

B8. **ADVANCED WORK:**
apply the above to advanced topics selected according to the interests of individual students.

15 Course Structure, Modules, Credits and Progression and Award Requirements

The BSc (Hons) Computing conforms to the Academic Regulations for Coventry University Undergraduate Awards at the Coventry University Branch at The Knowledge Hub Egypt. Within the parameters set by the regulations, the course is designed to equip graduates with the core knowledge, skills, and expertise within the broad field of computing. Modules within the course, the levels, credit value, and the assessment weighting are outlined in the table. All modules at Levels 4 and 5 are mandatory. In Level 6, students study a combination of mandatory modules with two of four optional module choices.

In order to obtain a BSc (Hons) Computing degree in Computer Science Programme, students must meet the Coventry University Branch at The Knowledge Hub requirements for an Honours degree, including passes in the following modules:

Level 4 (Year 1)

Semester 1	Semester 2
4000CMD – Programming: Concepts and Algorithms	4003CMD – Programming: Professional Practice
4001CMD – Mathematical Skills for Computer Professionals	4004CMD – Working with Data
4002CMD – Computer Systems	4005CMD – Integrative Project

Level 5 (Year 2)

Semester 1	Semester 2
5002CMD – Advanced Algorithms	5003CMD – Operating Systems, Security and Networks
5001CMD – Artificial Intelligence	5004CMD – Data Science
5000CMD – Theory of Computation	5005CMD – Software Engineering

Level 6 (Year 3)

Semester 1	Semester 2
6000CMD - Security	6003CMD – Dissertation and Project Artefact
6002CMD – Project Discovery	6005CMD - Web Application Development
6001CMD – Machine Learning	6004CMD - Mobile Application Development *(Optional)*
	6005CMD – Web API Development *(Optional)*
	6006CMD – Parallel and Distributed Programming *(Optional)*
	6007CMD – Advanced Programming Paradigm *(Optional)*

*Optional modules may be subject to change
The table above is an indicative course structure. The delivery pattern may vary.

15.1 Progression through course

To progress from one level to the next, students must meet the requirements specified in the University regulations. The conditions for progression from one level to the next and the classification of degrees awarded will be determined by the number and level of successful module passes achieved in accordance with the University Regulations.

Semester of Study/One Academic year at Coventry University (Optional)

The course structure and timing of delivery at The Knowledge Hub shall be aligned with the equivalent course at Coventry University to enable a student to complete a semester of study/one academic year at Coventry University as part of their studies. The marks achieved at Coventry University will be used in the assessment of the student's performance at the end of each level and used in the calculation of the final degree classification.
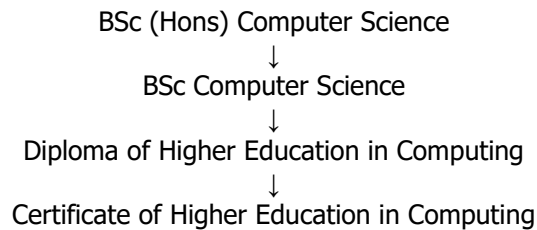
15.2 Conditions for fall back award

For a fall back award students must meet the relevant requirements specified in the University regulations.

Modules within the course, their status (whether mandatory or options), the levels at which they are studied, and their credit value are identified in the table below.

Credit level	Module Code	Title	Learning Credit	Assessment credit	Mandatory/ Optional	Course Learning Outcomes
4	KH4000CMD	Programming: Concepts and Algorithms	20	20	Mandatory	B1, B2, B6
4	KH4001CMD	Mathematical Skills for Computing Professionals	20	20	Mandatory	B1, B7
4	KH4002CMD	Computer Systems	20	20	Mandatory	B1, B3
4	KH4003CMD	Programming: Professional Practice	20	20	Mandatory	B1, B2, B6
4	KH4004CMD	Working With Data	20	20	Mandatory	B2, B4, B6, B7
4	KH4005CMD	Integrative Project	20	20	Mandatory	B1, B2, B3, B4, B5, B6, B7, B8
5	KH5001CMD	Artificial Intelligence	20	20	Mandatory	B1, B4, B6, B7
5	KH5000CMD	Theory Of Computation	20	20	Mandatory	B1, B7
5	KH5002CMD	Advanced Algorithms	20	20	Mandatory	B1, B2, B6
5	KH5003CMD	Operating Systems, Security, and Networks	20	20	Mandatory	B3, B6
5	KH5004CMD	Data Science	20	20	Mandatory	B2, B4, B6
5	KH5005CMD	Software Engineering	20	20	Mandatory	B2, B5, B6, B7, B8
6	KH6002CMD	Project Discovery	20	20	Mandatory	B1, B2, B3, B4, B5, B6, B7, B8
6	KH6003CMD	Dissertation and Project Artefact	20	20	Mandatory	B1, B2, B3, B4, B5, B6, B7, B8
6	KH6000CMD	Security	20	20	Mandatory	B2, B3, B5, B6, B7, B8
6	KH6001CMD	Machine Learning	20	20	Mandatory	B1, B2, B4, B7, B8
Students can choose 2 modules from the below:						
6	KH6004CMD	Mobile Application Development	20	20	Optional	B2, B3, B5, B6, B7, B8
6	KH6005CMD	Web API Development	20	20	Optional	B2, B3, B5, B6, B7, B8
6	KH6006CMD	Parallel and Distributed Programming	20	20	Optional	B1, B2, B3, B7, B8
6	KH6007CMD	Advanced Programming Paradigms	20	20	Optional	B1, B2, B7, B8

Cascade of Awards:
BSc (Hons) Computer Science ↓ BSc Computer Science ↓ Diploma of Higher Education in Computing ↓ Certificate of Higher Education in Computing

16 Criteria for Admission and Selection Procedure

Level 4 Entry

Students applying with an International Baccalaureate with a score of 29 or above, to include one from Mathematics, Physics, Chemistry, Design Technology or IT at Higher level.

A-level BBB to include one from Mathematics, Physics, Chemistry, Further Mathematics, Computer Science, Computing or Design Technology. Excludes General Studies.

Students who have achieved a Diploma with 2.5 GPA out of 4 or 3.0 CGPA out of 5 (Subject to syllabus match).

Students are required to have an IELTS score of at least 6.0 overall with a minimum of 5.5 in each skill or TOEFL iBT with a score of 79 and a minimum component score of 18.

Non-standard entry students will be considered on a case-by-case basis.

17 Academic Regulations and Regulations of Assessment
This Course conforms to the [Regulations for the delivery of Coventry University Undergraduate awards at the Coventry University Branch at The Knowledge Hub, Egypt.](#)

18 Indicators of Quality Enhancement

The Course is managed by the School of Computing Board of Study, of The Knowledge Hub.

The Progression and Awards Board (PAB) for The Knowledge Hub is responsible for considering the progress of all students and making awards in accordance with both the University and course-specific regulations.

The assurance of the quality of modules is the responsibility of the Boards of Study which contribute modules to the course. This activity will be performed in partnership with Coventry University, UK.

External Examiners have the opportunity to moderate all assessment tasks and a sample of assessed work for each module. They will report annually on the course and/or constituent modules and their views are considered as part of the Collaborative Course Quality Enhancement Monitoring (C-CQEM). Details of the C-CQEM process can be found on The Knowledge Hub's web site.

Students are represented on the Student Forum and Board of Study, all of which normally meet two or three times per year. They are also represented at the branch board which happens once every year. Student views are also sought through module and course evaluation questionnaires.

The QAA's Higher Education Review undertaken in February 2015 confirmed that Coventry University meets the UK expectations regarding the:
- setting and maintenance of the academic standards of awards
- quality of student learning opportunities
- quality of the information about learning opportunities
- enhancement of student learning opportunities

19 Additional Information

Enrolled students have access to additional, key sources of information about the course and student support including:

* Academic Course Director(s) are responsible for particular activities across the course and are able to provide advice and support to students in course-related matters;

* Student Handbook;

* Module Descriptors;

* CCQEM Reports;

* The Knowledge Hub Study Support Information.