Programme specification

(Notes on how to complete this template are provided in Annexe 3)

1. Overview / factual information

Programme/award title(s)	BSc (Honours) in Computer Science
Teaching Institution	Deree – The American College of Greece
Awarding Institution	The Open University (OU)
Date of first OU validation	March 2025
Date of latest OU (re)validation	N/A
Next revalidation	2029/30
Credit points achieved for the award	360
UCAS Code (if applicable)	
HECoS Code (if applicable)	
LDCS Code (FE Colleges England only	
Programme start date and cycle of starts if appropriate.	Fall 2025
Underpinning QAA subject benchmark(s)	Computing
Other external and internal reference points used to inform programme outcomes (including QAA Characteristics Statements). For apprenticeships, the standard or framework against which it will be delivered.	
Professional/statutory/ accreditation recognition	Professional rights in Greece
For apprenticeships fully or non-integrated Assessment. If fully integrated, EPAO being used.	
Mode(s) of Study (PT, FT, DL, Mix of DL & Face-to-Face) Apprenticeship	FT
Duration of the programme for each mode of study	3 years

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if they takes full advantage of the learning opportunities that are provided.

More detailed information on the learning outcomes, content, and teaching, learning and assessment methods of each module can be found in student module guide(s) and the students handbook.

The accuracy of the information contained in this document is reviewed by the University and may be verified by the Quality Assurance Agency for Higher Education.

Dual accreditation (if applicable)	NECHE Accredited
Date of production/revision of this specification	January 2025

2. Programme overview

2.1 Educational aims and objectives

In congruence with the mission of the College and the School of Liberal Arts and Sciences, the BSc in Computer Science programme sets a learner-centred educational framework which promotes critical and innovative thinking, advocates ethical practice, and cultivates skills and dispositions that complement knowledge and address the emergent challenges in the continuously evolving computer science and related domains. It is our commitment to ensure that holders of the degree are prepared for graduate studies, academic research, and multifaceted careers in the dynamic computer science sector.

Programme goals

Goal 1: Integrate state-of-the-art research into classroom teaching.
Goal 2: Prepare graduates for further studies in Computer Science, as well as derived and application disciplines.
Goal 3: Prepare graduates with the knowledge and skills to engage with innovative research.
Goal 4: Prepare graduates for careers in computing, such as, software engineer, programmer, data analyst, data scientist, AI specialist, ML consultant, web developer, mobile developer, game developer, user experience professional, UX/UI developer, AR/VR specialist, information security analyst, systems engineer, cloud specialist, IT project manager, ICT officer, Digital Project manager, as well as sector-specific computing jobs.

Programme Competencies

Computer Science program graduates should be able to:

1. Identify the potential of emergent research and technologies in the computing sector and related disciplines.

2. Assess and solve problems algorithmically: Good solutions to common problems at an appropriate level of abstraction are expected - Analytical and problem-solving skills should be developed.
3. Be competent programmers
4. Assess and design computing software / products according to ethical and legal standards.
5. Think at multiple levels of abstraction, be adaptable and able to handle ambiguity and uncertainty.

In addition to the above the following skills will be fostered:

- Life-long learner
- Collaborative and teamwork abilities
- Global and cultural competence
- Cross-disciplinary - understanding of non-computing disciplines
- Adversarial thinker/Computational thinker
- Knowledge of algorithms and data structures
- Familiarity with software engineering principles
- Strong mathematical and logical skills
- Effective communication skills

Program Learning Outcomes (PLOs)

A. Knowledge and Understanding

A1. Understand, modify, debug, refactor and analyze programs in a variety of different programming languages.
A2. Learn new programming languages and computational paradigms they encounter in the future.

B. Cognitive Skills

B1. Read, comprehend, and assess computing literature and related work.
B2. Identify, isolate, and solve important computing subproblems.

C. Practical and Professional Skills

C1. Plan and complete a one or two-term computing project.
C2. Conduct field research and in-depth investigation related to the requirements of computing components or solutions.

D. Key/Transferable Skills

D1. Present technological topics clearly, both orally and in written form.
D2. Work independently or in groups in accordance with the values and principles of professional ethics.

2.2 Relationship to other programmes and awards

(Where the award is part of a hierarchy of awards/programmes, this section describes the articulation between them, opportunities for progression upon completion of the programme, and arrangements for bridging modules or induction)

The programme is part of a US bachelor's degree programme, awarded with a total of 121 US credits and consisting of 40 modules:

- 13 modules in Liberal Education
- 25 modules of Concentration (including 3 modules from a subplan)
- 2 modules of Electives

LIBERAL EDUCATION-MISSION

A vital component of the undergraduate experience, the Liberal Education program prepares students to become globally engaged twenty-first century citizens with the knowledge, intellectual habits, practical skills, and socio-cultural sensibilities needed in a rapidly changing world. Liberal Education helps students develop essential competencies for success across disciplines and in life beyond college by cultivating open mindedness, tolerance, problem-solving ability, intellectual curiosity and creativity. It also promotes thoughtful self-expression, an ethical compass, and responsibility to the local and global communities.

Deree-Liberal Education Program

Total	**43**
Core Modules	
Academic Writing (WP designated course)	3
Integrated Academic Writing & Ethics	3
Academic Writing, Research (WP 1212)	3
Mathematics (basic statistics, college algebra, OR higher)	3
Public speaking or professional communication or equivalent	3
Introduction to information systems or equivalent computer literacy course*	3
Any Natural Science with lab	4
Liberal Education electives (must meet at least 4 LE competencies)	
LE designated course in STEM/Natural Sciences	3
LE designated course in Social Sciences	9
LE designated course in Humanities	6
LE designated course in Fine and Performing Arts	3

* May be fulfilled through appropriate academic evaluation

LE designated course in Social Sciences and Humanities must come from at least two different principles

Computer Science programme Liberal Education Program

Core Courses:

WP 1010 Introduction to Academic Writing	3

WP 1111 Integrated Academic Writing and Ethics	3
WP 1212 Academic Writing and Research	3
MA 2021 Applied Statistics ***or***	3
MA 2025 Applied Statistics for Science	
HC 2300 Professional Communication	3
ITC 2088 Introduction to Programming	3
Any Natural Science with a lab	4

Liberal Education Electives:

LE designated course in STEM/Natural Sciences	3
LE designated courses in the Social and Behavioural Sciences (from more than one discipline)	9
ITC/PH 3036 LE Privacy, Policy, Law and Technology	3
Two additional courses in Social and Behavioural Sciences	6
LE designated courses in Humanities (from more than one discipline)	6
PH 3005 LE Business Ethics (L5) -or- PH 3010 LE Ethics (L5)	3
One additional course in Humanities (except Philosophy courses)	3
LE designated course in Fine and Performing Arts	3

The programme also shares modules with the following programmes:

Module	**Shared with**
MA 2055 Discrete Mathematics	Applied Math minor
ITC 2024 Computer Networks & Cybersecurity Fundamentals (L4)	Information Technology, Cybersecurity and Networks
ITC 2086 Computer System Architecture (L4)	Information Technology, Cybersecurity and Networks
ITC 2088 Introduction to Programming (L4)	Information Technology, Cybersecurity and Networks
ITC 2093 Operating Systems Concepts (L4)	Information Technology, Cybersecurity and Networks
ITC 2197 Object Oriented Programming Techniques (L4)	Information Technology, Cybersecurity and Networks
ITC 2205 Software Engineering Practices (L4)	Information Technology
ITC 3006 Mathematics for Computing (L5)	Information Technology, Cybersecurity and Networks
ITC 3160 Fundamentals of RDBMS (L5)	Information Technology, Cybersecurity and Networks
ITC 3213 Algorithms and Complexity (L5)	Information Technology
ITC 3287 Advanced Object Oriented and Functional Programming (L5)	Information Technology
ITC 3051 User Experience and Interaction Design (L5)	Information Technology
ITC 3133 Data Mining and Big Data (L5)	Information Technology
ITC 3154 Cognitive Computing (L5)	Information Technology
ITC 3138 Edge Computing (L5)	Information Technology
ITC 3231 Cryptography and Network Security (L5)	Information Technology, Cybersecurity and Networks
ITC 4030 Human Computer Interaction (L6)	Graphic Design, Information Technology

ITC 4040 Methods in ICT Project Research & Management (L6)	Information Technology
ITC 4056 Enabling Technologies (L6)	Information Technology
ITC 4358 Immersive Computing (L6)	Information Technology
ITC 4558 High Performance Computing (L6)	Information Technology
ITC 4568 Machine Learning (L6)	Information Technology
ITC 4056 Enabling Technologies (L6)	Information Technology

2.3 For Foundation Degrees, please list where the 60 credit work-related learning takes place. For apprenticeships an articulation of how the work based learning and academic content are organised with the award.

N/A

2.4 List of all exit awards

Certificate of Higher Education in Computer Science
Diploma of Higher Education in Computer Science
BSc (Honours) in Computer Science
BSc in Computer Science

3. Programme structure and learning outcomes

(The structure for any part-time delivery should be presented separately in this section.)
Please adjust 'levels' to reflect SCQF if applicable

Programme Structure - LEVEL 4					
Compulsory modules	**Credit points**	**Optional modules**	**Credit points**	**Is module compensable?**	**Semester runs in**
ITC 2024 Computer Networks & Cybersecurity Fundamentals	15			Yes	Fall/Spring
ITC 2086 Computer System Architecture	15			Yes	Fall/Spring
ITC 2088 Introduction to Programming	15			Yes	Fall/Spring
ITC 2093 Operating Systems Concepts	15			Yes	Fall/Spring
ITC 2164 Fundamentals of Artificial Intelligence	15			Yes	Fall/Spring
ITC 2197 Object Oriented Programming Techniques	15			Yes	Fall/Spring
ITC 2205 Software Engineering Practices	15			Yes	Fall/Spring
MA/ITC 2055 Discrete Mathematics	15			Yes	Fall/Spring

Intended learning outcomes at Level 4 are listed below:

Learning Outcomes – LEVEL 4	
3A. Knowledge and understanding	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
	Learning and Teaching Strategy: In congruence with the Learning and Teaching strategy of the College, the following methods are used at **Level 4**: • Class lectures, interactive learning (class discussions, group work), exercises and practical problems solved in class. Active learning methods and a student-centred teaching approach are particularly encouraged. • Formative coursework is regularly assigned and discussed in class with students actively participating in the discussion.

	• Collaborative in-class assignments and discussions are assigned. • Laboratory practical sessions using various simulations tools as well as training and practice on data analysis tools. • Video Tutorials • Formative group-work assignments aiming at exposing students to team-work and cooperation are regularly assigned. • Blackboard online learning platform tools including discussion boards, blogs, Wikis and Journals are employed to facilitate learning and collaboration. • AI generative tools oriented to inform the course contents. At **Level 4**, student learning is guided by the teaching staff and provides the ground for students to gain comprehensive understanding of core computer science topics, and start cultivating programming skills. Almost all modules will take part in the laboratory to facilitate real-time practice and application. At this level, students are exposed to group work projects through mainly formative assessments and in class assignment, while in Software Engineering Practices they work in teams for their summative project. Assessment methods give students the opportunity to display knowledge and understanding and staff the opportunity to identify issues in either. Students get timely feedback (within 21 days) on their formative and summative assessments by their lecturer.
A1. Understand, modify, debug, refactor and analyze programs in a variety of different programming languages.	**Where it is taught:** **ITC 2024 Computer Networks & Cybersecurity Fundamentals** Computer communications systems components, models, operation, and applications. Networking standards, protocols and connectivity aspects. Local area networks design, implementation. Wide area networks, emerging technologies. Cybersecurity threats, measures and protocols. Cryptography basics. **ITC 2088 Introduction to Programming** Problem solving; problem analysis; top-down design of algorithms; implementation; testing and debugging techniques; documentation. Structured programming language constructs: data types, variables, constants, parameters, input and output, selection, iteration, file handling, arrays, elementary sorting and searching algorithms. Modular programming. **ITC 2197 Object Oriented Programming Techniques** Object-oriented concepts and problem-solving techniques. GUI components; event handling, collections framework and data structures, data persistence, performance and efficiency issues.

Learning Outcomes – LEVEL 4	
3A. Knowledge and understanding	
A2. Learn new programming languages and computational paradigms they encounter in the future	**ITC 2086 Computer System Architecture** Computer architecture. Digital circuits and components. Types of data representation. Computer organizations and design. Logic design. **ITC 2093 Operating Systems Concepts** Operating system structures; functions and techniques; Performance; avoidance of deadlock and security issues. Management of Operating System resources and processes. **ITC 2164 Fundamentals of Artificial Intelligence** Introduction to artificial intelligence. Concepts in knowledge representation, state space search, machine learning. Modern applications. LLMs. Games. **ITC 2205 Software Engineering Practices** Software engineering (SE) major methodologies; sw qualities; sw lifecycle; CI/CD; essential tools; GitHub; concepts in project planning; code of ethics and professional practice. ***For Assessment Methods of all modules (L4-6) see attached file "CSC Programme Assessment Plan.xlsx."*** **Where it is taught:** **ITC 2088 Introduction to Programming -** As described above **ITC 2197 Object Oriented Programming Techniques** – As described above **ITC 2164 Fundamentals of Artificial Intelligence** - As described above **MA/ITC 2055 Discrete Mathematics** Introductory course in discrete mathematics which concerns the study of discrete structures; covers topics such as logic, number theory, induction, set theory, combinatorics, probability theory, and graph theory. ***For Assessment Methods of all modules (L4-6) see attached file "CSC Programme Assessment Plan.xlsx."***

3B. Cognitive skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
B1. Read, comprehend, and assess computing literature and related work.	**Where it is taught:** **Not taught or assessed at any module in this level**
B2. Identify, isolate, and solve important computing subproblems.	**Where it is taught:** **ITC 2024 Computer Networks & Cybersecurity Fundamentals-** As described above **ITC 2164 Fundamentals of Artificial Intelligence –** As described above **ITC 2197 Object Oriented Programming Techniques** – As described above

3C. Practical and professional skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
C1. Plan and complete a one or two-term computing project.	**Where it is taught:** **ITC 2205 Software Engineering Practices –** As described above **ITC 2164 Fundamentals of Artificial Intelligence** - As described above
C2. Conduct field research and in-depth investigation related to the requirements of computing components or solutions.	**Where it is taught:** **ITC 2205 Software Engineering Practices –** As described above **ITC 2093 Operating Systems Concepts -** As described above **ITC 2164 Fundamentals of Artificial Intelligence** - As described above

3D. Key/transferable skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
D1. Present technological topics clearly, both orally and in written form.	**Where it is taught:** **ITC 2024 Computer Networks & Cybersecurity Fundamentals -** As described above **ITC 2205 Software Engineering Practices –** As described above **ITC 2164 Fundamentals of Artificial Intelligence -** As described above **ITC 2186 Computer System Architecture -** As described above **ITC 2193 Operating System Concepts -** As described above **ITC 2197 Object Oriented Programming Techniques -** As described above
D2. Work independently or in groups in accordance with the values and principles of professional ethics.	**Where it is taught:** **ITC 2024 Computer Networks & Cybersecurity Fundamentals -** As described above **ITC 2205 Software Engineering Practices –** As described above **ITC 2164 Fundamentals of Artificial Intelligence -** As described above **ITC 2186 Computer System Architecture -** As described above **ITC 2193 Operating System Concepts -** As described above **ITC 2197 Object Oriented Programming Techniques -** As described above

Programme Structure - LEVEL 5					
Compulsory modules	**Credit points**	**Optional modules**	**Credit points**	**Is module compensable?**	**Semester runs in**
ITC 3006 Mathematics for Computing	15			Yes	Fall/Spring
ITC 3160 Fundamentals of RDBMS	15			Yes	Fall/Spring
ITC 3131 Theory of Computation	15			Yes	New
ITC 3213 Algorithms and Complexity	15			Yes	Fall/Spring
ITC 3287 Advanced Object Oriented and Functional Programming	15			Yes	Fall
PH 3010 LE Ethics **or** PH 3005 LE Business Ethics	15			Yes	Fall/Spring
		One of the following:			
		MA 3232 Numerical Methods	15	Yes	New (Fall 2025)
		MA 3333 Mathematical Statistics	15	Yes	Fall/Spring
		ITC 3051 User Experience and Interaction Design	15	Yes	Fall/Spring
		ITC 3133 Data Mining and Big Data	15	Yes	Spring
		ITC 3154 Cognitive Computing	15	Yes	Fall
		ITC 3138 Edge Computing	15	Yes	Fall
		ITC 3231 Cryptography and Network Security	15	Yes	Fall
		1 module from subplan	15	Yes	Depends on module

	Programme Structure – Single Registerable Modules			
Compulsory modules	**Credit points**	**Pre-Requisite as SRM**	**Is module compensatable?**	**Semester runs in**
			No	

Intended learning outcomes at Level 5 are listed below:

Learning Outcomes – LEVEL 5	
3A. Knowledge and understanding	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
	Learning and Teaching Strategy: In congruence with the Learning and Teaching strategy of the College, the following methods are used at **Level 5**: • Class lectures, interactive learning (class discussions, group work), exercises and practical problems solved in class. Active learning methods and a student-centred teaching approach are particularly encouraged. • Formative coursework is regularly assigned and discussed in class with students actively participating in the discussion. • Collaborative in-class assignments and discussions are assigned. • Laboratory practical sessions using various simulations tools as well as training and practice on data analysis tools. • Video Tutorials • Formative and summative group-work assignments aiming at exposing students to team-work and cooperation are regularly assigned. • Blackboard online learning platform tools including discussion boards, blogs, Wikis and Journals are employed to facilitate learning and collaboration. • AI generative tools oriented to inform the course contents.

Learning Outcomes – LEVEL 5	
3A. Knowledge and understanding	
A1. *Understand, modify, debug, refactor and analyze programs in a variety of different programming languages.*	At Level 5, student learning gradually becomes more independent through projects aiming at developing students' analytical and computational thinking. Students are exposed to all types of assessments including exams as well as individual and group projects. Assessment methods give students the opportunity to display knowledge and understanding and staff the opportunity to identify issues in either. Students get timely feedback (within 21 days) on their formative and summative assessments by their lecturer. **Where it is taught:** **ITC 3160 Fundamentals of RDBMS** Relational Database Management Systems concepts. Data modelling, systems development and data administration in a database environment. The relational model, normalization, transaction management, concurrency, control, database security and the Structured Query Language (SQL). **ITC 3213 Algorithms and Complexity** Study of algorithms and their complexity. Design, analysis and evaluation of performance. Complexity theory and classes of complexity. O, Big O and Theta notation. Computational classes. Union-Find, Divide and Conquer, Greedy, Dynamic programming, Linear Programming, Search in graphs, NP-completeness. **ITC 3287 Advanced OO and Functional Programming** Advanced object-oriented and functional programming concepts; algorithmic and problem-solving techniques; advanced GUI components; event handling; data structures; data persistence; efficiency issues. **ITC 3154 Cognitive Computing** Cognition vs AI; learning and reasoning; deep learning; tools; computer vision; audio; natural language representation, processing, and generation; sentiment analysis, dialog reasoning. Cognition vs AI; learning and reasoning; deep learning; tools; computer vision; audio; natural language representation, processing, and generation; sentiment analysis, dialog reasoning. **ITC 3138 Edge Computing** New computing paradigms; fog, edge infrastructures; slicing, management and orchestrations; IoT integration; applications; IIoT; business models; big data analytics in the fog; GDPR restrictions.

Learning Outcomes – LEVEL 5	
3A. Knowledge and understanding	
A2. Learn new programming languages and computational paradigms they encounter in the future.	**Where it is taught:** **ITC 3213 Algorithms and Complexity –** As described above **ITC 3154 Cognitive Computing –** As described above **ITC 3138 Edge Computing –** As described above **ITC 3133 Data Mining and Big Data** Data and feature selection, cleaning, extracting patterns from data, evaluation, big data, tools, applications. **ITC 3131 Theory of Computation** Automata, languages and expressions, pumping lemmas, Turing machines, computability, decidability, complexity theory, complexity classes, problem reducibility. **ITC 3231 Cryptography and Network Security** Basic symmetric encryption algorithms; DES, AES; Public key encryption; hash functions; digital signatures; confidentiality issues; authentication and identity management; SSL/TLS; IP security. **ITC 3006 Mathematics for Computing** Concepts of Algebra, Geometry, Proofs, Structures, Counting, Probabilities and Inference, Statistics. **ITC 3051 User Experience and Interaction design** User experience approaches, methods and tools; interaction paradigms; augmented and virtual reality basics; prototyping and wireframes; human factors and ergonomics. **MA 3232 Numerical Methods** Numerical methods of approximating solutions to linear and nonlinear problems; numerical techniques for solving a single nonlinear equation, polynomial interpolation, numerical differentiation and integration, solution of initial value problems, and the solution of systems of linear and non-linear equations. **MA 3333 Mathematical Statistics** Probability theory and statistical inference. Axiomatic approach to probability and counting. Discrete and continuous distributions; generating functions; Central Limit Theorem; sampling distributions. Confidence intervals and significance tests. Correlation and Regression. ***For Assessment Methods of all modules (L4-6) see attached file "CSC Programme Assessment Plan.xlsx."***

3B. Cognitive skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
B1. Read, comprehend, and assess computing literature and related work.	**Where it is taught:** **ITC 3213 Algorithms and Complexity –** As described above **ITC 3133 Data Mining and Big Data –** As described above **ITC 3154 Cognitive Computing –** As described above **ITC 3138 Edge Computing –** As described above **PH 3005 LE Business Ethics** Introduction to major theories and basic moral problems in the domain of business. The use of reasoning in moral assessment of business practices. Application of moral theories to specific cases of corporate conduct ranging from the individual to society in general, in the local and the international context. **PH 3010 LE Ethics** Introduction to the basic problems and theories of moral philosophy. The use of reasoning in moral assessment of actions and persons. Emphasis on the connection between theory and practice by application of theories to issues that matter.
B2. Identify, isolate, and solve important computing subproblems.	**Where it is taught:** **ITC 3160 Fundamentals of RDBMS –** As described above **ITC 3131 Theory of Computation –** As described above **ITC 3213 Algorithms and Complexity –** As described above **ITC 3287 Advanced OO and Functional Programming –** As described above **ITC 3051 User Experience and Interaction design –** As described above **MA 3232 Numerical Methods –** As described above **ITC 3133 Data Mining and Big Data –** As described above **ITC 3231 Cryptography and Network Security –** As described above

3C. Practical and professional skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
***C1**. Plan and complete a one or two-term computing project.*	**Where it is taught:** **ITC 3160 Fundamentals of RDBMS** – As described above **ITC 3213 Algorithms and Complexity** – As described above **ITC 3287 Advanced OO and Functional Programming** – As described above **ITC 3051 User Experience and Interaction design** – As described above **ITC 3133 Data Mining and Big Data** – As described above **ITC 3154 Cognitive Computing –** As described above **ITC 3138 Edge Computing –** As described above
***C2**. Conduct field research and in-depth investigation related to the requirements of computing components or solutions.*	**Where it is taught:** **ITC 3131 Theory of Computation –** As described above **ITC 3213 Algorithms and Complexity** – As described above **ITC 3287 Advanced OO and Functional Programming** – As described above **ITC 3133 Data Mining and Big Data** – As described above **ITC 3154 Cognitive Computing –** As described above **ITC 3138 Edge Computing –** As described above **ITC 3231 Cryptography and Network Security –** As described above

3D. Key/transferable skills

Learning outcomes:	Learning and teaching strategy/ assessment methods
D1. *Present technological topics clearly, both orally and in written form.*	**Where it is taught:** **ITC 3160 Fundamentals of RDBMS** – As described above **ITC 3131 Theory of Computation –** As described above **ITC 3213 Algorithms and Complexity** – As described above **ITC 3287 Advanced OO and Functional Programming** – As described above **ITC 3051 User Experience and Interaction design** – As described above **ITC 3133 Data Mining and Big Data** – As described above **ITC 3154 Cognitive Computing –** As described above **ITC 3138 Edge Computing –** As described above **ITC 3231 Cryptography and Network Security –** As described above
D2. *Work independently or in groups in accordance with the values and principles of professional ethics.*	**Where it is taught:** **ITC 3160 Fundamentals of RDBMS** – As described above **ITC 3213 Algorithms and Complexity** – As described above **ITC 3287 Advanced OO and Functional Programming** – As described above **PH 3005 LE Business Ethics or PH 3010 LE Ethics** – As described above **ITC 3051 User Experience and Interaction design** – As described above **ITC 3133 Data Mining and Big Data** – As described above **ITC 3154 Cognitive Computing –** As described above **ITC 3138 Edge Computing –** As described above **ITC 3231 Cryptography and Network Security –** As described above

Programme Structure - LEVEL 6					
Compulsory modules	**Credit points**	**Optional modules**	**Credit points**	**Is module compensable?**	**Semester runs in**
ITC 4040 Methods in ICT Project Research & Management	15			Yes	Fall/Spring
ITC 4343 Programming Languages and Compilers	15				Fall (as of Fall 2026)
ITC 4646 Computer Science Senior Project **or**	15			Yes	Fall/Spring
ITC 4747 Thesis in Computer Science				Yes	Fall/Spring
		Three of the following:			
		ITC 4030 Human Computer Interaction	15	Yes	Fall
		ITC 4056 Enabling Technologies	15	Yes	Fall
		ITC 4350 Immersive Computing	15	Yes	Spring
		ITC 4558 High Performance Computing	15	Yes	Fall
		ITC 4568 Machine Learning	15	Yes	Spring
		1 module from subplan	15	Yes	Depends on module
		1 module from subplan	15	Yes	Depends on module

Intended learning outcomes at Level 6 are listed below:

Learning Outcomes – LEVEL 6	
3A. Knowledge and understanding	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
	Learning and Teaching Strategy: In congruence with the Learning and Teaching strategy of the College, the following methods are used at **Level 6**: • Class lectures, interactive learning (class discussions, group work), exercises and practical problems solved in class. Active learning methods and a student-centred teaching approach are particularly encouraged. • Formative coursework is regularly assigned and discussed in class with students actively participating in the discussion. • Collaborative in-class assignments and discussions are assigned. • Laboratory practical sessions using various simulations tools as well as training and practice on data analysis tools. • Video Tutorials

	• Formative and summative group-work assignments aiming at exposing students to team-work and cooperation are regularly assigned. • Milestone submissions set to assist the students with their summative work in a progressive manner, cultivating their project and time management skills, while they receive formative feedback on selected components. • Progress meetings complement the milestone submissions; individual or group, they are held in order to monitor the progress of research/project assessments, provide formative feedback through discussion. • Blackboard online learning platform tools including discussion boards, blogs, Wikis and Journals are employed to facilitate learning and collaboration. • Usage of AI generative tools as required. **At level 6**, the programme focuses on modules with learning outcomes and teaching methods aiming to develop student's skills in performing research and producing, assessing and managing complete computing solutions, so that they can deploy appropriate theory and tools for their senior work. At this level, students will apply critical thinking and computational skills in an independent learning environment.

Learning Outcomes – LEVEL 6	
3A. Knowledge and understanding	
A1. Understand, modify, debug, refactor and analyze programs in a variety of different programming languages.	Through the capstone project module students will integrate knowledge and apply design and development skills in order to manage the whole process involved in the effective deployment of computers to solve practical problems. The final deliverable of the capstone project module is a small-scale computer-based product or a component of a larger application that aims to support the goals of a business firm, organisation, or other real-world requirement. **Where it is taught:** **ITC 4343 Programming Languages and Compilers** Programming language concepts, syntax and semantics. Grammars, parsing, lexical analysis, semantic analysis, code generation. **ITC 4646 Computer Science Senior Project or** Work on an ICT solution or component with application in a computing or cross-discipline area, on an approved topic, with minimum supervision. **ITC 4747 Thesis in Computer Science** Work on an ICT solution or component with application in a computing or cross-discipline area, on an approved topic, with

	minimum supervision. **ITC 4030 Human-Computer Interaction** Foundations of human computer interaction. Interaction design basics. User Experience (UX). HCI in the software **ITC 4056 Enabling Technologies** IoT and industrial IoT (iIoT) architectures; standards; softwarisation and virtualisation technologies; fifth generation (5G) networks; federated learning AI systems; blockchain; edge computing; virtual and augmented. From conception to completion. **ITC 4558 High Performance Computing** Big data challenges; multi-core programming; shared and distributed memory; concurrency models; synchronization and coordination; distributed algorithms and frameworks; GPU programming. **ITC 4350 Immersive Computing** Virtual, augmented and mixed realities; concepts in immersion, presence, and flow; approaches, tools and techniques; immersive technologies and paradigms; perceptual, cognitive, and symbolic aspects of the experience of VR and AR; impact on the user experience. **ITC 4568 Machine Learning** Machine learning problem representation and optimization; supervised, unsupervised, adversarial and deep learning; decision trees, neural networks, vector machines, rule-extractors; density-based algorithms. ***For Assessment Methods of all modules (L4-6) see attached file "CSC Programme Assessment Plan.xlsx."***

Learning Outcomes – LEVEL 6	
3A. Knowledge and understanding	
A2. Learn new programming languages and computational paradigms they encounter in the future.	**Where it is taught:** **ITC 4343 Programming Languages and Compilers -** As described above **ITC 4030 Human-Computer Interaction -** As described above **ITC 4558 High Performance Computing -** As described above **ITC 4350 Immersive Computing -** As described above **ITC 4568 Machine Learning -** As described above

3B. Cognitive skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
B1. Read, comprehend, and assess computing literature and related work.	**Where it is taught:** **ITC 4040 Methods in ICT Project Research and Management** Integrated methods for ICT projects investigation and planning; problem identification; field review; selected investigative techniques; modelling and evaluation techniques; testing strategies; quality considerations. A comprehensive coverage of the procedure required for the development of a thorough ITC capstone project proposal. **ITC 4343 Programming Languages and Compilers -** As described above **ITC 4646 Computer Science Senior Project -** As described above **ITC 4747 Thesis in Computer Science -** As described above **ITC 4030 Human-Computer Interaction -** As described above **ITC 4056 Enabling Technologies -** As described above **ITC 4350 Immersive Computing -** As described above **ITC 4558 High Performance Computing -** As described above **ITC 4568 Machine Learning -** As described above
B2. Identify, isolate, and solve important computing subproblems.	**Where it is taught:** **ITC 4343 Programming Languages and Compilers -** As described above **ITC 4646 Computer Science Senior Project -** As described above **ITC 4747 Thesis in Computer Science -** As described above **ITC 4030 Human-Computer Interaction -** As described above **ITC 4056 Enabling Technologies -** As described above **ITC 4350 Immersive Computing -** As described above **ITC 4558 High Performance Computing -** As described above **ITC 4568 Machine Learning -** As described above ***For Assessment Methods of all modules (L4-6) see attached file "CSC Programme Assessment Plan.xlsx."***

3C. Practical and professional skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
C1. *Plan and complete a one or two-term computing project.* ***C2***. *Conduct field research and in-depth investigation related to the requirements of computing components or solutions.*	**Where it is taught:** **ITC 4040 Methods in ICT Project Research and Management -** As described above **ITC 4343 Programming Languages and Compilers -** As described above **ITC 4646 Computer Science Senior Project -** As described above **ITC 4747 Thesis in Computer Science -** As described above **ITC 4030 Human-Computer Interaction -** As described above **ITC 4056 Enabling Technologies -** As described above **ITC 4350 Immersive Computing -** As described above **ITC 4558 High Performance Computing -** As described above **ITC 4568 Machine Learning -** As described above **Where it is taught:** **ITC 4040 Methods in ICT Project Research and Management -** As described above **ITC 4343 Programming Languages and Compilers -** As described above **ITC 4646 Computer Science Senior Project -** As described above **ITC 4747 Thesis in Computer Science -** As described above **ITC 4056 Enabling Technologies -** As described above **ITC 4350 Immersive Computing -** As described above **ITC 4558 High Performance Computing -** As described above **ITC 4568 Machine Learning -** As described above
3D. Key/transferable skills	

Learning outcomes:	Learning and teaching strategy/ assessment methods
D1. Present technological topics clearly, both orally and in written form.	**Where it is taught:** **ITC 4040 Methods in ICT Project Research and Management -** As described above **ITC 4343 Programming Languages and Compilers -** As described above **ITC 4646 Computer Science Senior Project -** As described above **ITC 4747 Thesis in Computer Science -** As described above **ITC 4030 Human-Computer Interaction -** As described above **ITC 4056 Enabling Technologies -** As described above **ITC 4350 Immersive Computing -** As described above **ITC 4558 High Performance Computing -** As described above **ITC 4568 Machine Learning -** As described above
D2. Work independently or in groups in accordance with the values and principles of professional ethics.	**Where it is taught:** **ITC 4040 Methods in ICT Project Research and Management -** As described above **ITC 4343 Programming Languages and Compilers -** As described above **ITC 4646 Computer Science Senior Project -** As described above **ITC 4747 Thesis in Computer Science -** As described above **ITC 4030 Human-Computer Interaction -** As described above **ITC 4056 Enabling Technologies -** As described above **ITC 4350 Immersive Computing -** As described above **ITC 4558 High Performance Computing -** As described above **ITC 4568 Machine Learning -** As described above

[BSc (Honours) in Computer Science]

[BSc in Computer Science]

4. Distinctive features of the programme structure

- **Where applicable, this section provides details on distinctive featurs such as:**
  - where in the structure above a professional/placement year fits in and how it may affect progression
  - any restrictions regarding the availability of elective modules
  - where in the programme structure students must make a choice of pathway/route
- **Additional considerations for apprenticeships:**
  - how the delivery of the academic award fits in with the wider apprenticeship
  - the integration of the 'on the job' and 'off the job' training
  - how the academic award fits within the assessment of the apprenticeship

The Computer Science programme has the following distinctive features:

1. It leads to the awarding of two degrees:
   a. A US BSc degree accredited by the US NECHE (New England Commission of Higher Education), and
   b. A UK BSc (Honors) validated by the UK Open University (OU).
2. It brings from top US programs the idea of students taking a subplan, where they will learn to take cross-disciplinary knowledge and apply it to computer science solution. (culminating with their senior project or thesis). This is unique compared to equivalent programs in Greece.
3. It prepares students to sit for relevant certifications, taking advantage of existing collaboration between the IT/CYN/CSC department and the industry.
4. It offers opportunities for practical and professional experience through research, involvement in funded projects, and internships (US degree).
5. It provides a student-centred learning environment that promotes the academic and personal development, broadens horizons, and builds confidence to become independent learners.
6. It exposes students to state-of-the art facilities and a unique campus environment (including, for example the simulated trading room, which is unique in Greece – ideal for students with subplan in economics or finance).

5. Support for students and their learning
(For apprenticeships this should include details of how student learning is supported in the workplace)

All new students participate in an orientation programme as they begin their first semester at the College. The orientation program is designed to introduce them to the campus, the academic system, College regulations and policies, and student life.

Student Success Center (SSC)

The Student Success Centre supports students by offering comprehensive, integrated services in the areas of academic advising, Open University validation issues, student records, registration, and payments in a one-stop area. The Centre is committed to providing students with consistent, high-quality service, both in person and through technology. The Student

Success Centre aims to create the optimum conditions so that students can follow the path to academic success.

Students may visit the Student Success Centre to pay a bill, request a certificate, obtain a form, arrange to bring a visitor on campus, obtain their transcript, see an academic advisor, ask about OU validation, change a course, and obtain or replace their student ID.

The SSC web page has been set up to reflect the one-stop concept of the Centre and includes information from different departments. It may be accessed from the "Quick Links" on the ACG homepage (www.acg.edu) and it allows students to print forms or view the academic calendar, academic policies, final exams schedule, course schedule, graduation instructions, major requirements, frequently asked questions (FAQs), the e-mail directory, and financial aid and international student information. From the SSC web page students may choose to log on to the myACG portal, where they can print their personal course schedule and their unofficial transcript. To log on, students need to go to the SSC and get their PIN, which is private, should not be shared with anyone, and will be given to the students only if they have no obligations (business office, library, or academic advising).

Academic Advising

All students are assigned an academic advisor responsible for assisting them in gaining the greatest benefit from their educational experience at the College. Good academic advising is a vital part of the learning process and an integral part of the basic teaching function of the College. Effective academic advising provides specific aid to students in considering and completing academic programs, but it goes beyond mere course scheduling; it includes planning, decision-making, implementation, and evaluation of academic, personal, and career-related matters, and exploration. The College assigns all entering freshmen a First-Year advisor from the Office of Academic Advising. Thereafter, the advising programme is faculty-based and fosters personal contact between students and faculty. Department Heads and Programme Coordinators act as educational consultants.

New incoming students and continuing Deree-ACG students are required to consult every semester and during the announced advising period with an advisor at the Office of Academic Advising.

Advisors never make decisions for students. Their overriding objective is to assist students in developing the maturity required to make their own choices and to be responsible for the consequences of those choices.

Student Academic Support Services (SASS)

Student Academic Support Services (SASS) is a service available to all ACG students, offering a vital program designed to enhance the educational experience. Through one-to-one and group workshop sessions, SASS learning facilitators support the development of academic and study skills at the undergraduate and graduate level across all schools. SASS learning facilitators recognize that individual qualities and efforts vary; therefore, they adopt a learner-centered approach in order to promote individual development and to respond to the needs of each student. SASS facilitators practice a non-instructional philosophy in which students' academic work reflects their own ideas, critical skills, and abilities.

Disability and Learning Differences

The College Committee on Disability and Learning Differences monitors and recommends policies and procedures to benefit individuals with disabilities and learning differences. In addition, it makes recommendations in consultation with relevant academic departments/ areas regarding special assessments to be given by tutors to specific students with disability and/or learning differences.

The Committee proposes alternative assessment methods for specific students with disability and/or learning differences in consultation with relevant academic departments/ areas to ensure appropriateness of assessment method. The Committee is obliged to follow the advice of the department with regard to appropriateness and communicate with the Registrar about this. The Committee on Disability and Learning Differences submits the list of OU students with disabilities and learning difficulties and their approved alternative assessment methods to the OU Validation Office and Registrar.

6. Criteria for admission

(For apprenticeships this should include details of how the criteria will be used with employers who will be recruiting apprentices.)

Admission Policy and Process document ("*Admissions-Policy-and-Process_2024.pdf"*) is attached with this document.

7. Language of study

English

8. Information about non-OU standard assessment regulations (including Professional Statutory Recognised Body requirements)

N/A

9. For apprenticeships in England, summary of how the End Point Assessment (EPA) links to the academic award

N/A

10. Methods for evaluating and improving the quality and standards of teaching and learning including the student experience

Deree faculty comprises of experienced professionals active in their respective fields through their research, publications, think-tank work and other forms of professional engagement. Significant body of research has been garnered by Deree faculty in the fields of learning innovation and pedagogy. Recognizing the need of a structured holistic approach to teaching and learning, over the past years, Deree has been implementing a variety of initiatives aimed at boosting the faculty's teaching excellence geared toward maintaining high standards and their comparability across sections, modules, and schools. An important component of this strategy was based on the recognition that new faculty members should socialize with experienced ones, fostering the best standards exemplified by the OU and Deree teaching culture.

Each academic year a wide range of activities take place aiming to raising staff awareness with regards to the College's emphasis on pedagogy and research. Lectures, workshops, and seminars are organized by the College and are well-attended by the staff of all departments/areas.

Recognizing the importance of pedagogy and research, the College has established the Deree Teaching and Learning Center, which organizes workshops on current pedagogy, informs faculty about relevant opportunities abroad and seeks external funding for such purposes among other things. It also assists departments with planning and monitoring the implementation of a series of events (e.g. lectures, workshops, symposia, round-table discussions, colloquia, retreats) every semester.

A variety of teaching, learning and assessment resources will be used that include:

- web-based materials
- hands-on practical work
- virtual and augmented reality solutions
- computer-aided learning packages
- online forums
- directed reading
- formative assessments
- summative assessments
- self-assessment questions
- AI generative tools

11. Changes made to the programme since last (re)validation

N/A It's a new programme

Annexe 1: Curriculum map

Annexe 2: Curriculum mapping against the apprenticeship standard or framework (delete if not required.)

Annexe 3: Notes on completing the OU programme specification template

Annexe 1 - Curriculum map

This table indicates which study units assume responsibility for delivering (shaded) and assessing (✓) particular programme learning outcomes.

Please amend this mapping to suit frameworks used within the different nations if appropriate.

Level	Study module/unit	Programme outcomes								Available as single registerable module?
		A1	A2	B1	B2	C1	C2	D1	D2	
4	ITC 2024 Computer Networks & Cybersecurity Fundamentals	✓								NO
	ITC 2086 Computer System Architecture	✓								NO
	ITC 2088 Introduction to Programming	✓	✓							NO
	ITC 2093 Operating Systems Concepts	✓								NO
	ITC 2164 Fundamentals of Artificial Intelligence	✓								NO
	ITC 2197 Object Oriented Programming Techniques	✓	✓							NO
	ITC 2205 Software Engineering Practices	✓	✓			✓	✓	✓	✓	NO
	MA/ITC 2055 Discrete Mathematics		✓							NO

Level	Study module/unit	Programme outcomes								Available as single registerable module?
		A1	A2	B1	B2	C1	C2	D1	D2	
5	ITC 3006 Mathematics for Computing		✓							NO
	ITC 3160 Fundamentals of RDBMS	✓						✓		NO
	ITC 3131 Theory of Computation		✓		✓			✓		NO
	ITC 3213 Algorithms and Complexity	✓	✓		✓			✓		NO
	ITC 3287 Advanced Object Oriented and Functional Programming	✓				✓			✓	NO
	PH 3010 LE Ethics **or** PH 3005 LE Business Ethics			✓					✓	NO
	MA 3232 Numerical Methods		✓		✓					NO
	MA 3333 Mathematical Statistics		✓							NO
	ITC 3051 User Experience and Interaction Design		✓			✓		✓		NO
	ITC 3133 Data Mining and Big Data		✓		✓	✓		✓		NO
	ITC 3154 Cognitive Computing		✓			✓		✓		NO
	ITC 3138 Edge Computing		✓			✓		✓	✓	NO
	ITC 3231 Cryptography and Network Security		✓		✓		✓	✓		NO
	One L5 module from subplan									NO

Level	Study module/unit	Programme outcomes								Available as single registerable module?
		A1	A2	B1	B2	C1	C2	D1	D2	
6	ITC 4040 Methods in ICT Project Research & Management			✓		✓	✓	✓	✓	NO
	ITC 4343 Programming Languages and Compilers	✓	✓	✓	✓	✓	✓	✓		NO
	ITC 4646 Computer Science Senior Project	✓		✓	✓	✓	✓	✓		NO
	ITC 4747 Thesis in Computer Science	✓		✓	✓	✓	✓	✓	✓	NO
	ITC 4030 Human Computer Interaction	✓		✓		✓		✓	✓	NO
	ITC 4056 Enabling Technologies	✓		✓	✓	✓	✓	✓	✓	NO
	ITC 4350 Immersive Computing	✓	✓	✓	✓	✓	✓	✓	✓	NO
	ITC 4558 High Performance Computing	✓	✓	✓	✓	✓	✓	✓	✓	NO
	ITC 4568 Machine Learning	✓	✓	✓	✓	✓	✓	✓	✓	NO
	One L6 module from subplan									NO
	One L6 module from subplan									NO

Annexe 3: Notes on completing programme specification templates

1 - This programme specification should be mapped against the learning outcomes detailed in module specifications.

2 – The expectations regarding student achievement and attributes described by the learning outcome in section 3 must be appropriate to the level of the award within the **QAA frameworks for HE qualifications**: http://www.qaa.ac.uk/AssuringStandardsAndQuality/Pages/default.aspx

3 – Learning outcomes must also reflect the detailed statements of graduate attributes set out in **QAA subject benchmark statements** that are relevant to the programme/award: http://www.qaa.ac.uk/AssuringStandardsAndQuality/subject-guidance/Pages/Subject-benchmark-statements.aspx

4 – In section 3, the learning and teaching methods deployed should enable the achievement of the full range of intended learning outcomes. Similarly, the choice of assessment methods in section 3 should enable students to demonstrate the achievement of related learning outcomes. Overall, assessment should cover the full range of learning outcomes.

5 - Where the programme contains validated **exit awards** (e.g. CertHE, DipHE, PGDip), learning outcomes must be clearly specified for each award.

6 - For programmes with distinctive study **routes or pathways** the specific rationale and learning outcomes for each route must be provided.

7 – Validated programmes delivered in **languages other than English** must have programme specifications both in English and the language of delivery.