Programme Specification

Computer Science (Artificial Intelliegence) {Foundation}[Oct][FT][GCET][4yrs]

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Section 1: Key Programme Details

Part A: Programme Information

Programme title: Computer Science (Artificial Intelliegence) {Foundation}[Oct][FT][GCET][4yrs]

Highest award: BSc (Hons) Computer Science (Artificial intelligence)

Interim award: BSc Computer Science (Artificial intelligence)

Interim award: DipHE Computer Science (Artificial intelligence)

Interim award: CertHE Computer Science

Awarding institution: UWE Bristol

Affiliated institutions: Global College of Engineering and Technology (GCET)

Teaching institutions: Global College of Engineering and Technology (GCET)

Study abroad: No

Year abroad: No

Sandwich year: No

Credit recognition: No

Department responsible for the programme: FET Dept of Computer Sci & Creative Tech, Faculty of Environment & Technology

Contributing departments: Not applicable

Professional, statutory or regulatory bodies: Not applicable

Apprenticeship: Not applicable

Mode of delivery: Full-time

Entry requirements: For the current entry requirements see the UWE public website

For implementation from: 01 September 2021

Programme code: G50M13-OCT-FT-GE-G500

Section 2: Programme Overview, Aims and Learning Outcomes

Part A: Programme Overview, Aims and Learning Outcomes

Overview: This programme provides a flexible, employer-facing education in Computer Science.
Through modern teaching methods the programme supports students to use complex algorithms, implement software on state of the art platforms and explore big data. Suitably designed and selected modules offer students the opportunity to specialise their knowledge.

All our graduates will leave with familiarity of the basic tools and concepts of modern AI. Some of our graduates will have taken the opportunity to leave with advanced skills in AI and Data Analytics ready to meet the worldwide skills shortage in this area, while others might explore the evolving world of Smart Devices; making this programme valuable for the home and the overseas educational market.

Educational Aims: This programme aims to:

Develop able and enabled graduates who contribute to their profession and society.

Develop competent software developers who can explore and make use of new technologies as they emerge.

Develop graduates who have the skills and habits of thinking that allow for life-long learning.

Develop graduates who are equipped to make a contribution to the discipline either through research or practice.

Develop graduates who recognise their ethical and professional responsibilities.

Programme Learning Outcomes:
On successful completion of this programme graduates will achieve the following learning outcomes.

Programme Learning Outcomes

PO1.   Apply Artificial Intelligence concepts and techniques to offer innovative solutions to problems or to enhance the efficiency and effectiveness of existing systems.

PO2.   Be able to use their technical knowledge and skills to contribute to and deliver innovation through independent, self-driven evidence-based enquiry.

PO3.   Be able to recognise security threats and their implications, plan actions and design systems to manage them

PO4.   Be competent software developers, with excellent problem solving skills and the ability to adapt to different development environments

PO5.   Be able to make a significant contribution as a member of a team in the development of computer based systems, offering solutions in a range of application areas.

PO6.   Respond to and act upon the ethical, legal and professional implications which they may encounter during their professional lives.

PO7.   Be equipped to understand and respond to the changing needs of industry and society

Part B: Programme Structure

Year 1
The student must take 120 credits from the modules in Year 1.

Year 1 Compulsory Modules

Module Code	Module Title	Credit
UFCFQN-30-0	Computational Thinking and Practice 2021-22	30
UFCFRN-30-0	Creative Technology Studies 2021-22	30

| UFCFPN-30-0 | Information Practitioner Foundations 2021-22 | 30 |
| UFCFTN-30-0 | Web Foundations 2021-22 | 30 |

Year 2
The student must take 120 credits from the modules in Year 2.

Year 2 Compulsory Modules

Module Code	Module Title	Credit
UFCFGS-15-1	Artificial Intelligence I 2022-23	15
UFCFDS-15-1	Computer Systems Architecture 2022-23	15
UFCFFS-30-1	Foundations of Computing 2022-23	30
UFCFHS-30-1	Principles of Programming 2022-23	30
UFCFES-30-1	Web Development and Databases 2022-23	30

Year 3
The student must take 120 credits from the modules in Year 3.

Year 3 Compulsory Modules

Module Code	Module Title	Credit
UFCFYR-15-2	Advanced Algorithms 2023-24	15
UFCF8S-30-2	Advanced Software Development 2023-24	30
UFCF9S-15-2	Artificial Intelligence II 2023-24	15
UFCFAS-15-2	Machine Learning 2023-24	15
UFCFWK-15-2	Operating Systems 2023-24	15
UFCF7S-30-2	Systems Development Group Project 2023-24	30

Year 4

The student must take 120 credits from the modules in Year 4.

Year 4 Compulsory Modules

Module Code	Module Title	Credit
UFCFU3-15-3	Advanced Databases 2024-25	15
UFCFXK-30-3	Digital Systems Project 2024-25	30
UFCFTR-30-3	Distributed and Enterprise Software Development 2024-25	30
UFCF95-15-3	Entrepreneurial Skills 2024-25	15

Year 4 Optional Modules 1

The student must take 15 credits from the modules in Optional Modules 1

Module Code	Module Title	Credit
UFCFXR-15-3	Autonomous Agents and Multi-Agent Systems 2024-25	15
UFCFJP-15-3	Big Data Analytics 2024-25	15
UFCF7H-15-3	Mobile Applications 2024-25	15

Year 4 Optional Modules 2

The student must take 15 credits from the modules in Optional Modules 2

Module Code	Module Title	Credit
UFCFWR-15-3	Advanced Systems Programming 2024-25	15
UFCFEL-15-3	Security Data Analytics and Visualisation 2024-25	15

Part C: Higher Education Achievement Record (HEAR) Synopsis

A graduate of this programme will be equipped with excellent technical and thinking skills thus enabling them to be an innovative problem solver. They will be familiar with a and practised in a range of programming languages and deployment environments. They will be familiar with tools, techniques and methods in Artificial Intelligence. They will have experienced a rich teaching environment and will be practised in professional skills. They will have connected with industry and will be equipped to respond to the future. They will understand their ethical, legal and professional responsibilities as practising technologists.

Part D: External Reference Points and Benchmarks

The QAA Computing Benchmark Statement The latest QAA Subject Benchmark Statement for Computing was published in October 2019, and is applicable to this proposal. The design team has considered it in drawing up the structure of the programme, and is of the view that the proposal falls clearly within the scope of the benchmarks, as regards curriculum, teaching and learning, and the benchmarking standards

themselves. The benchmark describes the discipline of Computer Science in some detail and this

programme falls squarely within the expressed characteristics. For example, the statement (p 5.) states that, "Computer science provides the necessary knowledge to understand and build computational systems" and states that its main characteristics include, "fundamental computational concepts and algorithmic thinking, including recursive, distributed and parallel possibilities and attention to the benefits and the limitations of these; the role of these in devising approaches to areas of system design, problem solving, artificial intelligence, simulation and computational modelling recognition of the relationships between the concepts of requirements, specification, design, programme and data (in all its forms) validation and maintenance, as

well as the power of transformation and proof, and the place of these in computing understanding the power behind abstraction, the potential of multiple levels of abstraction and the role this plays in computing.

Understanding the opportunities for and the potential of automation, but also the

proper balance between automation and how humans effectively interact with computers, recognising the role of redundancy, diversity and separation of concerns in achieving reliable, usable and secure systems, often in the presence of uncertainty recognising simplicity and elegance as useful concepts and principles"
All of the above is covered by this programme. The benchmark also addresses subject-specific skills and teaching, learning and assessment.

The principles embodied with these sections of the benchmark statement have been incorporated into the design of this programme The benchmarks also contain (section 6) statements of the standards expected of graduates at threshold, typical and excellent levels. The team is of the view that the programme is structured in such a way that graduates will meet the required standards. In designing this programme we have made reference to the SEEC credit level descriptors for HE, 2016 http://www.seec.org.uk/wp- content/uploads/2016/07/SEEC-descriptors-2016.pdf and the QAA FHEQ descriptors to ensure that module and programme learning outcomes are expressed in a way that is appropriate to their level.

The UWE Enhancement Framework has helped to frame our thinking in terms of the context in which the students will learn, as has UWE 2030 strategy document.

Part E: Regulations
A: Approved to University Regulations and Procedures

https://www1.uwe.ac.uk/about/departmentsandservices/professionalservices/student andacademicservices/regulationspoliciesquality/regulationsandprocedures.aspx

It is the Award Board's responsibility to determine whether the student's attainment at FHEQ Level 3 is sufficient to progress to Level 4.