Programme Specification

Data Science [Frenchay]

Version: 2025-26, v1.0, Validated

Contents

Section 1: Key Programme Details

Part A: Programme Information

Programme title: Data Science [Frenchay]

Highest award: BSc (Hons) Data Science

Interim award: BSc Data Science

Interim award: DipHE Data Science

Interim award: CertHE Data Science

Awarding institution: UWE Bristol

Teaching institutions: UWE Bristol

Study abroad: Yes

Year abroad: No

Sandwich year: Yes

Credit recognition: No

School responsible for the programme: CATE School of Computing and Creative Technologies, College of Arts, Technology and Environment

Professional, statutory or regulatory bodies: Not applicable

Modes of delivery: Full-time, Sandwich

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

For implementation from: 01 September 2025

Programme code: INF100

Section 2: Programme Overview, Aims and Learning Outcomes

Part A: Programme Overview, Aims and Learning Outcomes

Overview: Data Science is a growing discipline requiring data handling skills combined with statistics and programming. In addition, it is vital to have knowledge of the kind of domain-specific issues where data-informed decision making and process improvements are needed. The BSc in Data Science will produce graduates equipped with skills that will make them highly employable in this burgeoning area.

The programme consists of a new set of core modules with some optional modules in the final year.

A key aspiration for the BSc Data Science is the development of practical, professional skills by fostering collaboration and a learning community of students, staff, alumni and industrial / international partners.

UWE's BSc will be distinctive in leveraging departmental and inter-faculty links to align teaching (including case studies and datasets) with sustainable development goals in environment, energy, health and resource management.

Features of the programme: This industry-focused, practical BSc(Hons) Data Science degree will give students in-demand skills crucial in this growing field. They will benefit from expert lecturers, strong industry links and a professional practice strand throughout their learning.

Educational Aims: To enable graduates to progress to data science-related roles (such as Data Scientist, Data Engineer, Data Analyst) in their organisation with scope and ability to contribute to organisational data-related capabilities, strategies and operations;

To develop resourceful, creative and independent thinkers able to adapt and respond to changing requirements, capabilities and opportunities in the data science space;

To foster confidence in working with data and managing associated concerns across

multiple dimensions of data literacy;

Through data-oriented interventions, to enable graduates to impact on organisational efficiency and productivity as well as societal challenges such as those relating to the built and natural environment, health, agriculture and energy.

Programme Learning Outcomes:

On successful completion of this programme graduates will achieve the following learning outcomes.

Programme Learning Outcomes

PO1.   Be able to construct questions and hypotheses relating to objectives and to identify experiments and key features.

PO2.   Use techniques such as statistical inference, machine learning, text and data analytics, to develop descriptive, predictive and prescriptive models and analyses adhering to good practice.

PO3.   Select, employ and evaluate platforms, tools, and data storage and management technologies and to build data pipelines and production-ready analytic products.

PO4.   Use software, good coding practice and AI automation to design, prototype and develop data science solutions.

PO5.   Continually evaluate and improve models and systems to ensure they meet requirements and objectives.

PO6.   Communicate the outcome of analyses and projects to stakeholders through verbal and multimedia reporting.

PO7.   Embody legal, ethical and societal requirements and needs through informed and reflective practice.

PO8.   Work cooperatively and collaboratively across functions and teams and demonstrate an outcomes-driven mindset.

Assessment strategy: The programme's assessments are designed to track individual and team-based competency development through a focus on practical projects and the assessment of both process and product.

All modules will focus on real-world problems and datasets, with a requirement for students to demonstrate the ability to research , apply and share relevant techniques as they would in the workplace.

Through the use of the artifact-based research projects in the group projects and dissertation, students will have an opportunity to bring together new skills in statistics, data management and technical development in capstone projects, where there will the option to focus on a business problem from their own organisations or from those suggested by industrial partners.

Student support: Espresso Programming and Espresso Maths are regular drop-in sessions where students can work on individual problems with staff members. Students can also access study skills support provided by the UWE Library staff.

Part B: Programme Structure

Year 1

Year 1 Compulsory Modules (Full Time and Sandwich)
Full Time and Sandwich students must take 120 compulsory credits in Year 1.

Module Code	Module Title	Credit
UFCEJH-30-1	Data Platforms, Pipelines and Processing 2025-26	30
UFCEJK-15-1	Data Science Contexts 2025-26	15
UFCEJB-30-1	Statistical Data Analysis 2025-26	30
UFCEJX-15-1	Introduction to Programming for Data Science 2025-26	15
UFCEJA-30-1	Foundational Practice Team Project 2025-26	30

Year 2

Year 2 Compulsory Modules (Full Time and Sandwich)
Full Time and Sandwich students must take 120 compulsory credits in Year 2.

Module Code	Module Title	Credit
UFCEK3-30-2	Advanced Practice Team Project 2026-27	30
UFCEKG-15-2	Further Programming for Data Science 2026-27	15
UFCEK5-30-2	Big Data and Generative Models 2026-27	30
UFCEK4-30-2	Fundamentals of Machine Learning 2026-27	30
UFCEKF-15-2	Professional Issues in Data Science 2026-27	15

Year 3
Full Time students must take 90 compulsory credits and 30 optional credits in year 3.

Sandwich students must take 15 credits in year 3.

Year 3 Compulsory Modules (Full Time)
Full time students must take 90 compulsory credits.

Module Code	Module Title	Credit
UFCEKN-30-3	Advanced Machine Learning 2027-28	30
UFCEKP-30-3	Data Science and AI Individual Project 2027-28	30
UFCEKJ-30-3	Professional Practice Team Project 2027-28	30

Year 3 Compulsory Modules (Sandwich)
Sandwich students must take 15 credits.

Module Code	Module Title	Credit

| | UFCFE6-15-3 | Professional Experience 2027-28 | 15 |

Year 3 Optional Modules (Full Time)
Full time students must choose 30 optional module credits.

Module Code	Module Title	Credit
UFCFEL-15-3	Security Data Analytics and Visualisation 2027-28	15
UFCFXR-15-3	Autonomous Agents and Multi-Agent Systems 2027-28	15
UFCFU3-15-3	Advanced Databases 2027-28	15

Year 4
Sandwich students must take 105 credits in year 4.

Year 4 Compulsory Modules (Sandwich)
Sandwich students must take 90 compulsory credits.

Module Code	Module Title	Credit
UFCEKN-30-3	Advanced Machine Learning 2028-29	30
UFCEKP-30-3	Data Science and AI Individual Project 2028-29	30
UFCEKJ-30-3	Professional Practice Team Project 2028-29	30

Year 4 Optional Modules (Sandwich)
Sandwich students must choose a 15 credit module.

Module Code	Module Title	Credit
UFCFXR-15-3	Autonomous Agents and Multi-Agent Systems 2028-29	15
UFCFEL-15-3	Security Data Analytics and Visualisation 2028-29	15
UFCFU3-15-3	Advanced Databases 2028-29	15

Part C: Higher Education Achievement Record (HEAR) Synopsis

This programme provides graduates with the mix of skills and capabilities required by UK business for the specification, design and delivery of data science solutions in a range of business contexts and application domains.

It develops technically competent individuals who think and communicate effectively and who can conduct inquiry, solve problems, undertake critical analysis and deliver effective data science solutions in a constantly changing business context.

It provides a solid foundation for lifelong learning, emphasising the development of knowledge, skills and professional values essential to the practice of data science.

Part D: External Reference Points and Benchmarks

The QAA Computing Subject Benchmark Statement and the QAA Mathematics, Statistics and Operational Research (MSOR) Subject Benchmark Statements
The latest QAA Subject Benchmark Statements for Computing and MSOR were published in October 2019 and March 2023 respectively. While the programme does not fall squarely under either of these benchmark statements, they each provide a reference point for this proposal. The design team has considered them in drawing up the structure of the programme, and is of the view that the programme closely adheres to their standards as regards curriculum, teaching and learning.
https://www.qaa.ac.uk/the-quality-code/subject-benchmark-statements/computing
https://www.qaa.ac.uk/the-quality-code/subject-benchmark-statements/subject-benchmark-statement-mathematics-statistics-and-operational-research

In designing this programme we have also made reference to the SEEC credit level descriptors for HE, 2016, and the QAA FHEQ descriptors, 2024, to ensure that module and programme learning outcomes are expressed in a way that is appropriate to their level.
http://www.seec.org.uk/...EC-descriptors-2016.pdf
https://www.qaa.ac.uk/docs/qaa/quality-code/the-frameworks-for-higher-education-qualifications-of-uk-degree-awarding-bodies-2024.pdf

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

Approved to University Regulations and Procedures