Programme Specification

Data Science {with International Pre-Masters} [UWEBIC]

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Section 1: Key Programme Details

Part A: Programme Information

Programme title: Data Science {with International Pre-Masters} [UWEBIC]

Highest award: MSc Data Science

Interim award: PGCert Data Science

Interim award: PGDip Data Science

Awarding institution: UWE Bristol

Affiliated institutions: UWE Bristol International College

Teaching institutions: UWEBIC and Frenchay

Study abroad: No

Year abroad: No

Sandwich year: No

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

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

For implementation from: 01 September 2026

Programme code: INUA12

Section 2: Programme Overview, Aims and Learning Outcomes

Part A: Programme Overview, Aims and Learning Outcomes

Overview: Data Science is a still-emerging 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.

A key aspiration for the MSc Data Science is the fostering of collaboration and a learning community of students, staff, alumni and industrial / international partners.

UWE's MSc 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: The programme includes an integrated international pre-master's component delivered on campus at University of the West of England, Bristol's International College (UWEBIC). The pre-master's modules (45 credits) provide higher-education skills and knowledge enabling progression to MSc Data Science at Frenchay on successful completion.

This programme draws on the university's leadership in the areas of inclusion, creativity and sustainability to develop data scientists with potential for global and local impact.

The programme has close links to the FutureSpace enterprise zone, with students gaining real-world insights and experiences while working on industry data science problems and datasets.

As a conversion course which was developed with government investment, we welcome students with diverse nationalities, backgrounds and experience levels, creating an exciting learning environment and a vibrant student community.

Educational Aims: To enable graduates to progress to senior and leading data science-related roles (such as Data Scientist, Data Engineer, Data Analyst) in their

organisation with scope and ability to develop 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. Construct questions and hypotheses relating to organisational objectives and to identify experiments or gather data bearing on these.

PO2. Critically evaluate and implement techniques such as statistical inference, machine learning, text and data analytics, to develop descriptive, predictive and prescriptive models and analyses.

PO3. Construct and appraise platforms, tools and data storage and management technologies and to build data pipelines and production-ready analytic products.

PO4. Critically evaluate and apply data retrieval and manipulation techniques across both established and emerging databases to design, prototype, and deploy data science solutions.

PO5. Continually evaluate and improve their personal professional practice through monitoring and applying relevant innovative methods and appropriate technologies.

PO6. Communicate the outcome of analyses of real world problems to multiple stakeholders through verbal and multimedia reporting.

PO7. Assess and respond to sustainability, fairness, accountability, transparency and ethical considerations in data science practice.

PO8. Demonstrate team work, leadership skills, and evidence-based decision making to deliver high quality data science solutions to the satisfaction of stakeholders.

Assessment strategy: Alongside assessment of competence with fundamental concepts through exams (particularly in the core modules focusing on data, coding and statistics), 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.

The pre-master's assessments establish the students' readiness to undertake their master's level study. Assessments include a portfolio of written and spoken components which allow students to demonstrate competencies required for continued success.

Delineation of problems and and experimental design will be assessed in the inference module and the group project.
The design and execution of statistical models, code and data structures are assessed as part of practical coursework and exam, with seen question used in some cases to give students adequate preparation time. Good ethical and legal practice will also be assessed explicitly in these modules .

Oral assessment in the group project and the core statistics model will be used to assess face to face communication of technical analyses. Group working and continuous enhancement is built in to process assessment in the interdisciplinary group module.

All modules, and especially the group project, 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 project 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 organizations or from those suggested by industrial partners.

Student support: During the international pre-master's, students are enrolled university students with access to UWE facilities (including library and IT services) while also receiving comprehensive academic and pastoral support at UWEBIC. Each student will be supported during the programme to develop the skills required for successful study and progression to the master's component of their degree. This will be through a number of methods, including access to a suite of support materials and individual or small group support depending on needs. There is an emphasis on facilitating learning in groups, teams, and individually with tutors using a range of resources to differentiate learning and meet individual learning needs.

Espresso Programming and Espresso Maths are regular drop-in sessions where students can work on individual problems with staff members.

Part B: Programme Structure

Year 1

The Pre-Masters term is taught by and delivered at UWEBIC.

The Masters year is taught by and delivered at UWE.

Students starting the Pre-Masters section of the programme in May will start the MSc section in September.
Students starting the Pre-Masters section of the programme in September will start the MSc section in January.

Year 1 Pre-Masters term - Compulsory Modules (Full Time)

Full time students must take 45 credits from the modules in Pre-Masters term - Compulsory Modules (Full Time)

Module Code	Module Title	Credit

UFCEYE-15-3	Computing Principles and Practice 2026-27	15
UFCEYF-30-3	Academic Inquiry and Data Collection Methods 2026-27	30

Year 1 Masters Year - Compulsory Modules (Full Time)
Full time students must take 150 credits from the modules in Masters year - Compulsory Modules (Full Time).

Module Code	Module Title	Credit
UFCFVQ-15-M	Programming for Data Science 2026-27	15
UFCEQE-15-M	Statistical Learning 2026-27	15
UFCF9Y-60-M	Data Science Masters Project 2026-27	60
UFCFLR-15-M	Data Management Fundamentals 2026-27	15
UFCEQA-15-M	Process and Practice in Data Science 2026-27	15
UFCEQD-30-M	Integrative Team Project 2026-27	30

Year 1 Masters year - Optional Modules (Full Time)
Full time students must take 30 credits from the modules in Masters year - Optional Modules (Full Time).

Students will be informed of possible option combinations when making choices.

Module Code	Module Title	Credit
UFCFMJ-15-M	Machine Learning and Predictive Analytics 2026-27	15
UFCFKR-15-M	Business Intelligence and Data Visualisation 2026-27	15
UFCEQC-15-M	Programming Data Intensive Applications 2026-27	15

Part C: Higher Education Achievement Record (HEAR) Synopsis

Graduates will exhibit analytical skills in problem framing and project design, data manipulation and retrieval, statistics and coding for data analysis. They will be able to develop and evaluate models, use established tools and methods, and effectively communicate their results to stakeholders. They will be able to work in a multifunctional team and manage a full development lifecycle.

Part D: External Reference Points and Benchmarks

Programme development has been part-funded under the Institute of Coding (IoC), and OfS funded project where UWE is part of a consortium of 33 universities and over 100 employers developing accessible technology education courses, training and events.

We are also participating in a project activity on shared curriculum tools and content for data science.

Programme design and curriculum has also been influenced by the EU-Horizon 2020 EDISON Data Science Framework (Data Science Competence Framework , Data Science Body of Knowledge and Model Curriculum)

Part E: Regulations

**A variant regulation for the progression requirement between the international premasters and MSc is being developed and will be submitted to academic board for approval before students start. **