UNIVERSITY OF EAST LONDON
PROGRAMME SPECIFICATION

Programme Aim and Title	Professional Doctorate in Data Science (D.DataSc)
Intermediate Awards Available	Postgraduate Certificate, Postgraduate Diploma
Teaching Institution(s)	University of East London
Alternative Teaching Institutions (for local arrangements see final section of this specification)	N/A
UEL Academic School	School of Architecture. Computing and Engineering
UCAS Code	N/A
Professional Body Accreditation	N/A
Relevant QAA Benchmark Statements	N/A
Additional Versions of this Programme	N/A
Date Specification Last Updated	November 2016

Programme Aims and Learning Outcomes

This programme is designed to give you the opportunity to:

- Develop knowledge and research skills in Data Science to empower you as a higher professional;
- Foster reflective and analytic approaches in work-based practice and research;
- Produce high-quality, international standard research output through the dissertation.

What you will learn:

A candidate who is awarded a Professional Doctorate will be expected to have achieved the following learning outcomes.

Created and interpreted new knowledge, through original research, or other advanced scholarship, of a quality to satisfy peer review, which extends the forefront of the discipline and merits publication;

Systematically acquired an understanding of a substantial body of knowledge which is at the forefront of an academic discipline or area of professional practice;

The general ability to conceptualise, design and implement a project for the generation of new knowledge, application or understanding at the forefront of the discipline and to adjust the project design in the light of unforeseen problems;

A detailed understanding of applicable techniques for research and advanced academic enquiry;

Ability to make informed judgements on complex issues in specialist fields, often in the absence of complete data, and be able to communicate their ideas and conclusions clearly and effectively to specialist and non-specialist audiences;

Ability to continue to undertake pure and/or applied research and development at an advanced level, contributing substantially to the development of new techniques, ideas or approaches;

The qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and largely autonomous initiative in complex and unpredictable situations, in professional or equivalent environments.

Knowledge

- Analyse and critically evaluate projects and research outputs in Data Science
- Engage in knowledge production through doctoral level research
- Have a critical understanding of and be able to engage with the data value chain in professional settings

Thinking skills

- Critical thinking and evidential reasoning
- Reflect on your professional and research practice
- Ability to make cross-disciplinary connections with other professionals and scientists

Subject-Based Practical skills

- Using diverse data resources and sophisticated software tools in extracting information and value from data
- Plan, execute and evaluate Data Science projects
- Produce international level scholarly research

Skills for life and work (general skills)

- Develop sophisticated data-centric skills
- Integrate research, and articulate research results into professional practice
- Respond positively and constructively to critical feedback
- Communicate complex ideas with other professionals and the public

Learning and Teaching

The Professional Doctorate in Data Science is aimed at professionals who wish to enhance and/or validate data-centric, evidence-based approaches within their chosen career through a combination of taught modules and doctoral research. A cross-disciplinary approach is central to the delivery of this programme and is therefore suitable for professionals in a broad range of professional disciplines and areas of employment.

The programme is unique, internationally, and ground-breaking in offering a Professional Doctorate qualification in Data Science.

Knowledge is developed through

- Reading the research literature
- Critical presentation and discussion of key concepts and techniques in lectures
- Undertaking lab-based practical exercises
- Undertaking research

Thinking skills are developed through

- Reading and evaluating the research literature
- Engaging in classroom discussions and in preparing coursework
- Undertaking research

Practical skills are developed through

- Undertaking lab-based practical exercises
- Undertaking research
- Work-based learning

Skills for life and work (general skills) are developed through

- Managing the learning process on the programme
- Planning for doctoral research
- Communicating complex ideas and techniques

Assessment

All the learning outcomes of the programme are assessed through:

- Laboratory session portfolios
- Coursework
- Research thesis

Students with disabilities and/or particular learning needs should discuss assessments with the Programme Leader to ensure they are able to fully engage with all assessment within the programme.

Work or Study Placements

N/A

Programme Structure

All programmes are credit-rated to help you to understand the amount and level of study that is needed.

One credit is equal to 10 hours of directed study time (this includes everything you do e.g. lecture, seminar and private study).

Credits are assigned to level 7 and level 8:

7 Equivalent in standard to a Master degree.
8 Equivalent in standard to a Doctorate degree.

Programmes are made up of modules that are each credit weighted.

The module structure of this programme:

Level	Module Code	Module Title	Credit Weighting	Core/Option	Available by Distance Learning? Y/N
7	DS7001	Data Ecology	30	Core	N
8	CN8002	Research Method for Technologists	30	Core	N
8	CN8001	Applied Research Tools & Techniques	30	Core	N
7	DS7003	Advanced Decision Making - Predictive Analytics and Machine Learning	30	Option	N
7	DS7002	Spatial Data Analysis	30	Option	N
7	DS7004	Work-based Project Review	30	Core	Y
7	DS7005	Planning for Doctoral Research	30	Core	Y

8	Stage 2	Thesis	360	Core	Y

Please note: Optional modules might not run every year, the programme team will decide on an annual basis which options will be running, based on student demand and academic factors, in order to create the best learning experience.

Additional detail about the programme module structure:

This programme includes six taught modules and a Research Thesis, and is available in full-time and part-time modes. Delivery of taught modules is by block and blended learning.

Each taught module is based on a one week intensive attendance at UEL Docklands campus according to advertised calendar, usually at the beginning of each semester. Students are expected to have a laptop computer for in-class practical sessions. During the remaining of the semester, students can work on their reading, practical components (from a workbook) and coursework. Students will be supported online or on campus depending on individual students' arrangements. The taught modules on this programme are available to be taken as credit bearing short courses by suitably qualified individuals.

This programme uniquely qualifies students in a field that is increasingly recognised as being central to most professional areas and research, and for which job opportunities have been rising exponentially. The doctoral research component will focus on pure or applied aspects of Data Science within the student's main discipline or area of employment. The research component provides for a solid grounding in methods and engagement with leading-edge ideas.

A core module for a programme is a module which a student must have passed (i.e. been awarded credit) in order to achieve the relevant named award. An optional module for a programme is a module selected from a range of modules available on the programme.

The overall credit-rating of this programme is 540 credits. If for some reason you are unable to achieve this credit you may be entitled to an intermediate award, the level of the award will depend on the amount of credit you have accumulated. You can read the University Student Policies and Regulations on the UEL website:
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies

Programme Specific Regulations

N/A

Typical Duration

It is possible to move from full-time to part-time study and vice-versa to accommodate any external factors such as financial constraints or domestic commitments. Many of our students make use of this flexibility and this may impact on the overall duration of their study period.

Typically the duration of the Professional Doctorate programme is expected to be 3.5 years full-time and 5 years part-time.

The time limit for completion of a programme is eight years after first enrolment on the programme.

Further Information

More information about this programme is available from:

- The UEL web site (https://www.uel.ac.uk)
- The programme handbook
- Module study guides
- UEL Manual of General Regulations (https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Manual-of-General-Regulations)
- The Graduate School https://www.uel.ac.uk/Discover/Academic-Schools/Graduate-School
- The Schools website https://www.uel.ac.uk/schools/ace/
- The Centre for Geo-Information Studies https://www.uel.ac.uk/geo-information
- Head of the Centre for Geo-Information Studies https://www.uel.ac.uk/Staff/b/allan-j-brimicombe
- The Programme Leader https://www.uel.ac.uk/Staff/l/yang-li

All UEL programmes are subject to thorough programme approval procedures before we allow them to commence. We also constantly monitor, review and enhance our programmes by listening to student and employer views and the views of external examiners and advisors.

Additional costs:

N/A

Alternative Locations of Delivery

N/A