



UNIVERSITY OF  
PORTSMOUTH

## COURSE SPECIFICATION

### *BSc (Hons) Data Science and Analytics*

**Academic Standards, Quality and Partnerships  
Department of Student and Academic Administration**

**March 2018**

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# COURSE SPECIFICATION

Please refer to the [Course Specification Guidance Notes](#) for guidance on completing this document.

<b>Course Title</b>	<b><i>Data Science and Analytics</i></b>
Final Award	<i>BSc (Hons)</i>
Exit Awards	<i>CertHE, DipHE, BSc, Bsc (Hons)</i>
Course Code / UCAS code (if applicable)	<i>C2686</i>
Mode of study	<i>Full Time</i>
Mode of delivery	<i>Campus</i>
Normal length of course	<i>3 years, 4 years with placement</i>
Cohort(s) to which this course specification applies	<i>from September 2019 intake onwards</i>
Awarding Body	<i>University of Portsmouth</i>
Teaching Institution	<i>University of Portsmouth</i>
Faculty	<i>Faculty of Technology</i>
School/Department/Subject Group	<i>School of Computing</i>
School/Department/Subject Group webpage	<a href="http://www.port.ac.uk/school-of-computing/">http://www.port.ac.uk/school-of-computing/</a>
Course webpage including entry criteria	<a href="https://www.port.ac.uk/study/courses/bsc-hons-data-science-and-analytics">https://www.port.ac.uk/study/courses/bsc-hons-data-science-and-analytics</a>
Professional and/or Statutory Regulatory Body accreditations	
<a href="#">Quality Assurance Agency Framework for Higher Education Qualifications (FHEQ) Level</a>	<i>Level 6</i>

This course specification provides a summary of the main features of the course, identifies the aims and learning outcomes of the course, the teaching, learning and assessment methods used by teaching staff, and the reference points used to inform the curriculum.

This information is therefore useful to potential students to help them choose the right course of study, to current students on the course and to staff teaching and administering the course.

Further detailed information on the individual modules within the course may be found in the relevant module descriptors and the Course Handbook provided to students on enrolment.

Please refer to the [Module Web Search](#) for further information on the course structure and modules.

## Educational aims of the course

This academic programme aims to equip students to work as professional data scientists, particularly in environments where in-depth knowledge, critical awareness and competence in data manipulation, data analytics, data mining, software engineering and statistical analysis is required in support of building complex information systems. These aspects are covered via core units at each level, integrated via a large, compulsory, individual project in the final year and tailored to individual students' key interests via a range of options. In addition, and more generally, the course aims to:

- Provide a strong emphasis on discipline of data science and analytics and its application within contemporary commercial and applied contexts.
- Provide a challenging, stimulating and self-rewarding study environment.
- Provide a framework whereby individual study paths may be forged based on choice from a range of options.
- Develop a range of graduate and employability skills by means of opportunities provided in the course units.
- Enable students to broaden their studies, at level 6 by including study units from outside their discipline as substitutes for degree option choices such as languages.
- Enable students to deal effectively within the social, ethical and legal frameworks associated with the data and IT profession.
- Accommodate student needs in relation to maximising their career potential by enabling them to develop knowledge, understanding and skills in their chosen subject area.
- Promote career aspirations by including study topics on general professional and ethical practice and study skills.

## Course Learning Outcomes and Learning, Teaching and Assessment Strategies

The [Quality Assurance Agency for Higher Education \(QAA\)](#) sets out a national framework of qualification levels, and the associated standards of achievement are found in their [Framework for Higher Education Qualifications](#) document.

The Course Learning Outcomes for this course are outlined in the tables below.

### A. Knowledge and understanding of:

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
A1	The main aspects and underlying methods of data science including data cleansing, preparation, statistical analysis, data analysis, data mining, security and visualisation.	<i>Lectures, workshops and Lab work</i>	<i>Coursework, portfolios and examinations</i>
A2	The fundamentals and underlying theory of computer science, programming, business analytics, database systems, software systems.	<i>Lectures and Lab work</i>	<i>Coursework, portfolios and Examinations</i>
A3	The theory and practice of requirements analysis, specification and prototyping, implementation, testing, integration, documentation, delivery and maintenance and their roles in software development.	<i>Lectures, workshop, group work, case studies, and Lab work</i>	<i>Coursework, Reports and Examinations</i>

A4	The methods for processing and analysing complex and large datasets for business and enterprise use, including international considerations.	<i>Lectures, workshops, lab work and demos</i>	<i>Coursework, portfolios, artefacts and Examinations</i>
A5	The business and financial environment, including role of data science in the operations and decision making and the main ethical and legal constraints within which organisations have to follow when dealing with data.	<i>Lectures, lab work, guest lectures, and case studies</i>	<i>Coursework, presentations and Examinations</i>

Add additional rows as required.

### B. Cognitive (Intellectual or Thinking) skills, able to:

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
B1	Apply high-level skills of an intellectual, analytical, creative and problem-solving nature.	<i>Lectures, workshops, lab work and case studies</i>	<i>Coursework, artefacts and Examinations</i>
B2	Make use of common skills with an ethical and critical awareness, which are necessary and appropriate for a reflective practitioner.	<i>Lectures, workshops and lab work</i>	<i>Reports and examination</i>
B3	Select and apply appropriate knowledge of data science, statistics, computing and business principles to design and implement data and software solutions.	<i>Lectures, workshops, lab work, demos and case studies</i>	<i>Coursework, portfolios, artefacts and Examinations</i>
B4	Develop critical skills with regard to research methods, literature searching, appraising and evaluating information from a variety of sources and viewpoints, and synthesising the results.	<i>Lectures and lab work</i>	<i>Reports</i>
B5	Plan, manage, undertake and report on a significant final year project related to the field of data science, analytics and data-driven software development.	<i>Lectures and one-to-one supervision meetings.</i>	<i>Final year project (report and artefact).</i>

### C. Practical (Professional or Subject) skills, able to:

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
C1	Select or create appropriate, effective and productive methods and tools for the successful construction and timely delivery of reliable, secure and usable data applications and business information systems.	<i>Lectures, workshops, lab work and guest lectures.</i>	<i>Coursework, artefacts and Examinations</i>
C2	Competently and critically assess, analyse and use current and future technologies in the main data science aspects i.e. data cleansing, preparation, visualisation, analysis and mining.	<i>Lectures, workshops, lab work and case studies.</i>	<i>Coursework, portfolio and Examinations</i>

C3	Ability to deal with complex and large data sets for building business and enterprise solutions.	<i>Workshops, lab work, demos.</i>	<i>Coursework and examination</i>
C4	Apply professional codes of conduct and appreciate the ethical considerations that underpin them.	<i>Lectures and lab work</i>	<i>Coursework and report.</i>

*Add additional rows as required.*

#### **D. Transferrable (Graduate and Employability) skills, able to:**

<b>LO number</b>	<b>Learning outcome</b>	<b>Learning and Teaching methods</b>	<b>Assessment methods</b>
D1	Communicate effectively in writing, speaking and in appropriate forms of presentation. Read, understand and analyse complex documents related to software products and system requirements.	<i>Lectures and lab work and group projects.</i>	<i>Coursework, report and essay.</i>
D2	Use information technology to efficiently handle data, simulation and assist with design and testing.	<i>Lectures, workshops and lab work</i>	<i>Coursework and examination.</i>
D3	Deal with the numerical, structured and unstructured data that can be found in many real-world problems and computing applications.	<i>Lectures, workshops and lab work</i>	<i>Coursework and portfolio</i>
D4	Assess problem domains and formulate appropriate problem solving strategies.	<i>Lectures, workshops and lab work</i>	<i>Coursework and examination.</i>
D5	Build on previous experience in order to enhance personal development and, work teams to achieve goals efficiently and effectively but nevertheless be distinctively individual.	<i>Lectures, workshops and lab work</i>	<i>Coursework and examination.</i>

*Add additional rows as required.*

## **Academic Regulations**

The current University of Portsmouth [Academic Regulations](#) will apply to this course.

## **Support for Student Learning**

The University of Portsmouth provides a comprehensive range of support services for students throughout their course, details of which are available at the [MyPort](#) student portal.

### **In addition to these University support services this course also provides:**

Data Science related support services:

- Have access and training in our new SAP Next-Gen Lab
- Work on our supercomputer, SCIAMMA, which has 3,702 computer cores and networked clusters that offer more processing power than most commercial platforms
- Several general-purpose computer laboratories and special-purpose laboratories including a Networking Lab, Mobile Application Development Lab, Big Data Lab and Human Computer Interaction Lab.
- Apply your analytical abilities to practical problems and real-world datasets, such as our research in cosmology, health information and cyber security
- A library of devices loanable to students for project work (including smart watches, tablets, sensors, smart-home devices, eye trackers) and lockers of laptops for student loan.

General support services:

- Flexible teaching and study facilities including multiple areas ideal for individual and group study.
- An induction programme that introduces the student to the University and their course.
- A Course Leader who manages the course and provides students with course-specific advice and guidance.
- A Personal Tutor, responsible for student pastoral support and guidance.
- Course specification for BSc (Honours) Data Science and Analytics.
- A Faculty Learning Support Tutor (Computing) who provides additional subject-specific one-to-one support.
- A Faculty Student Placement and Employability Centre (SPEC) to support students finding placements, a Placement Co-ordinator to manage placements for Computing students, and a Placement Tutor who visits students whilst on placement and provides additional support.

## Evaluation and Enhancement of Standards and Quality in Learning and Teaching

The University of Portsmouth undertakes comprehensive monitoring, review and evaluation of courses within clearly assigned staff responsibilities. Student feedback is a key feature in these evaluations, as represented in our [Policy for Listening to and Responding to the Student Voice](#) where you can also find further information.

## Reference Points

The course and outcomes have been developed taking account of:

*Insert additional reference points or delete as required*

- [University of Portsmouth Curriculum Framework Specification](#)
- [University of Portsmouth Education Strategy 2016 - 2020](#)
- [University of Portsmouth Code of Practice for Work-based and Placement Learning](#)
- [Quality Assurance Agency UK Quality Code for Higher Education](#)
- [Quality Assurance Agency Qualification Characteristic Statements](#)
- [Quality Assurance Agency Subject Benchmark Statement](#) for Computing Subject (C).
- [Quality Assurance Agency Framework for Higher Education Qualifications](#)
- Requirements of Professional and/or Statutory Regulatory Bodies: British Computer Society (BCS).
- Vocational and professional experience, scholarship and research expertise of the University of Portsmouth's academic members of staff
- National Occupational Standards

## Disclaimer

The University of Portsmouth has checked the information provided in this Course Specification and will endeavour to deliver this course in keeping with this Course Specification. However, changes to the course may sometimes be required arising from annual monitoring, student feedback, and the review and update of modules and courses.

Where this activity leads to significant changes to modules and courses there will be prior consultation with students and others, wherever possible, and the University of Portsmouth will take all reasonable steps to minimise disruption to students.

It is also possible that the University of Portsmouth may not be able to offer a module or course for reasons outside of its control, for example, due to the absence of a member of staff or low student registration numbers. Where this is the case, the University of Portsmouth will endeavour to inform applicants and students as soon as possible, and where appropriate, will facilitate the transfer of affected students to another suitable course.

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