

## COURSE SPECIFICATION

<b>Course Aim and Title</b>	BSc (Hons) Data Science and Artificial Intelligence
<b>Intermediate awards available</b>	<ul style="list-style-type: none"> <li>- BSc Data Science and Artificial Intelligence</li> <li>- DipHE Data Science and Artificial Intelligence</li> <li>- CertHE Computing</li> </ul>
<b>Teaching Institution(s)</b>	UEL (on campus)
<b>Alternative Teaching Institutions</b>	N/A
<b>UEL Academic School</b>	School of Architecture, Computing and Engineering
<b>UCAS code</b>	
<b>Professional Body Accreditation</b>	None
<b>Relevant QAA Benchmark statements</b>	Computing (2019)
<b>Additional Versions of This Course</b>	<p>BSc (Hons) Data Science and Artificial Intelligence with Foundation Year</p> <p>BSc (Hons) Data Science and Artificial Intelligence with Placement Year</p>
<b>Date specification last updated</b>	October 2020

### Course Aims and Learning Outcomes

#### **This course is designed to give you the opportunity to:**

- Gain a thorough understanding of the theoretical and practical skills of Data Science and Artificial Intelligence relevant to the specification, design, implementation and evaluation of information processing systems;
- Critically evaluate the management, economic, legal, social, professional and ethical dimensions of data-intensive systems and technologies;
- Develop the necessary study skills and knowledge to pursue further study
- Develop the professional skills necessary for a career in the IT industry
- Develop communication skills, initiative, professionalism and the ability to work independently as well as with others.

## What you will learn

### Knowledge

- Knowledge and understanding of essential facts, concepts, theories and principles of data science and artificial intelligence technology.
- Knowledge and understanding of contemporary tools and technologies to produce solutions relevant to the domain of data science/artificial intelligence.
- Understand the roles and responsibilities of a professional working within the computing profession.
- Appreciate the social, environmental, ethical, economic and commercial considerations that impact on the computer/data science solutions.

### Thinking skills

- Demonstrate independent thought in the study of data science and artificial intelligence.
- Analyse, interpret, synthesise and evaluate information.
- Identify, select, design and apply appropriate design methods to the solution of problems.
- Evaluate resource requirements of alternative solutions.

### Subject-Based Practical skills

- Retrieve, select and evaluate information from a variety of sources.
- Specify the requirements and practical constraints of data science/artificial intelligence solutions considering a wide range of aspects including legal, ethical and social issues.
- Plan, monitor, and evaluate the progress of an IT project.

### Skills for life and work (general skills)

- Structure and communicate ideas effectively, both orally and in writing,
- Learn independently in complicated contexts,
- Work professionally as an individual to develop creative solutions to problems,
- Work professionally in teams to develop creative solutions to problems.

## Learning and Teaching

## Learning environment

### Knowledge is developed through

- Exploiting opportunities created by technology innovations
- Designing and managing enterprise systems
- Identifying and evaluating solutions and sourcing alternatives
- Understanding, managing and controlling IT risks

### Thinking skills are developed through

- Problem solving
- Evaluation and critical analysis
- Self-appraisal and review of personal practice

### Subject-Based Practical skills are developed through

- Managing and securing data and infrastructure
- Managing IT projects
- Preparation of essays, reports and presentations and production of a major self-directed project

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

- Communication skills
- Learning and working both independently and in groups.

## Assessment

Knowledge is assessed by

- examinations (in-class and at end of year)
- case study analysis
- portfolio collation
- individual/group reports
- group assessments
- presentations

Thinking skills are assessed by

- all assessment tasks set, particularly those requiring critical evaluation
- self-appraisal of performance
- use of appropriate problem-solving skills

Practical skills are assessed by

- assessment tasks requiring use of general and specialised IT applications
- demonstration of projects/tasks
- use of equipment in practicals and presentations

Skills for life and work (general skills) are assessed by

- evidence of group and team working
- ability to work to time constraints

## Work or Study Placements

On our sandwich courses, you have the option to undertake a year-long industrial placement between L5 and L6. This placement is normally paid but securing a placement is a competitive process and cannot be guaranteed. The university has long standing links with a large number of well-known employers who can provide you with worthwhile work experience. You may be offered permanent employment by their placement organisation when you graduate. In addition to enhancing employment prospects, the placement provides a valuable learning experience, the results of which feed into your final year of study.

It is ultimately your responsibility to secure a placement. If you are unable to secure a placement, you will be transferred back to the course without the placement component.

In addition to the optional, yearlong placement, you will complete a work-based learning module in the second term of L5. During this module, you will undertake 70 hours of work-based learning which will provide you with opportunities to apply many of the skills and the knowledge acquired during the first half of your degree course.

## Course Structure

### Introduction

All courses 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 one of 5 levels:

- 3 equivalent in standard to GCE 'A' level and is intended to prepare students for year one of an undergraduate degree course
- 4 equivalent in standard to the first year of a full-time undergraduate degree course
- 5 equivalent in standard to the second year of a full-time undergraduate degree course
- 6 equivalent in standard to the third year of a full-time undergraduate degree course
- 7 equivalent in standard to a Masters degree

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

The module structure of this course:

Level	Module Code	Module Title	Credit Weighting	Core/Option	Available by Distance Learning? Y/N
4	CN4000	Information Systems Modelling and Design	20	Core	N
4	CN4001	Software Development	20	Core	N
4	CN4003	Web Technologies	20	Core	N
4	CN4004	Maths for Computing	20	Core	N
4	CN4002	Computer Systems and Networks	20	Core	N



4	CN4005	Mental Wealth; Professional Life 1 (IT Project Pitching)	20	Core	N
5	CN5000	Database Systems	20	Core	N
5	CN5005	Data Structures & Algorithms	20	Core	N
5	CN5022	Artificial Intelligence	20	Core	N
5	CN5009	Mental Wealth; Professional Life 2 (Computing in Practice)	20	Core	N
5	CN5001	Business Intelligence Analysis	20	Core	N
5	CN5021	Programming for Data Science	20	Core	N
P	CN5007	Placement	120	Option	N
6	CN6022	Big Data Infrastructure & Manipulation	20	Core	N
6	CN6004	Project Management	20	Core	N
6	CN6000	Mental Wealth; Professional Life 3 (Project)	20	Core	N
6	CN6001	Enterprise Architecture and Cloud Computing	20	Core	N
6	CN6021	Advanced Topics in Data Science and AI	40	Core	N

*\*Please Note – A core module for a course is a module which you must have passed (i.e. been awarded credit) in order to achieve the relevant named award. An optional module for a course is a module selected from a range of modules available on the course.*

The overall credit-rating of this course is 360 credits. If for some reason you are unable to achieve this number of credits, you may be entitled to an intermediate award, the level of the award will depend on the amount of credits you have accumulated. You can read the University Student Policies and Regulations on the UEL website.

## Typical duration

The expected duration of this course is three (3) years full-time or 4.5 years part-time.

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 your study period.

You cannot normally continue study on a course after 4 years of study in full time mode unless exceptional circumstances apply and extenuation has been granted. The limit for completion of a course in part time mode is 7 years from first enrolment.

An accelerated January start entry is available at level 4, allowing you to complete full-time in 2.5 years.

## Further Information

More information about this course is available from:

- The UEL web site ([www.uel.ac.uk](http://www.uel.ac.uk))
- The course handbook
- Module study guides
- UEL Manual of General Regulations (available on the UEL website)
- UEL Quality Manual (available on the UEL website)
- School web pages available on the UEL website)

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

## Additional Costs

No additional costs are anticipated.

## Alternative Locations of Delivery