Module Catalogue
Computer Science
Postgraduate Study Abroad 2021/2
Semester 1

Please note, postgraduate students can take modules relating to their degree course only.

Module Code	Module Name	Level	Semester	UK Credit Value	Credit Equivalency
Computer Science					
7BDIN006W	Big Data Theory and Practice	7	Semester 1	20	US Credits 4 / ECTS credits 10*
7BDIN007W	Data Repositories Principles and Tools	7	Semester 1	20	US Credits 4 / ECTS credits 10*
7BUIS008W	Data Mining and Machine Learning	7	Semester 1	20	US Credits 4 / ECTS credits 10*
7BUIS020W	Risk Management	7	Semester 1	20	US Credits 4 / ECTS credits 10*
7BUIS024W	Business Analytics	7	Semester 1	20	US Credits 4 / ECTS credits 10*
7BUIS030W	Data System Concepts and Fundamentals	7	Semester 1	20	US Credits 4 / ECTS credits 10*

* All transcripts are issued in UK credits. Please note the recommendation of a 4 US credit value equivalency is provided as guidance. Final credit values for all modules for US students are decided by your home institution and will be dependent on its credit transfer policies.

Computer Science

Big Data Theory and Practice

Module Code: 7BDIN006W
Location: Cavendish

Level 7
UK Credit Value: 20

Semester 1
Equivalent Credit Value: US Credits 4 / ECTS credits 10*

The module discusses how to manage the volume, velocity and variety of Big Data, SQL and no SQL databases, and it touches on issues related to data governance and data quality, including regulatory challenges.
Assessment: Practical Coursework (30%), Group Coursework (60%), Presentation (10%)
*All transcripts are issued in UK credits.

Data Repositories Principles and Tools

Module Code: 7BDIN007W | **Level 7** | **Semester 1**
Location: Cavendish | **UK Credit Value: 20** | **Equivalent Credit Value: US Credits 4 / ECTS credits 10***

An introductory module that covers theoretical & practical issues related to data modelling and the technologies employed to store persistent data. It reviews and evaluates the predominant & emerging data models and underlying technologies & approaches used in capturing, maintaining & modelling persistent data; addresses in detail practical issues related to data modelling.
Assessment: Group Coursework (100%)
*All transcripts are issued in UK credits.

Data Mining and Machine Learning

Module Code: 7BUIS008W | **Level 7** | **Semester 1**
Location: Cavendish | **UK Credit Value: 20** | **Equivalent Credit Value: US Credits 4 / ECTS credits 10***

This module will provide an overview of modern techniques in Machine Learning and Data Mining that are particularly customised for Data Science applications. Students will be introduced to a range of toolkits, such as R and Python and they will explore the features and strengths of different machine learning and data mining methodologies using selected data sets related to specific public sector or businesses application domains.
Assessment: Coursework (50%), Coursework (50%)
*All transcripts are issued in UK credits.

Risk Management

Module Code: 7BUIS020W | **Level 7** | **Semester 1**
Location: Cavendish | **UK Credit Value: 20** | **Equivalent Credit Value: US Credits 4 / ECTS credits 10***

Pre-requisite: a background in Computer Science
Information Technology (IT) risks are managed by identification of risk and controlling the risks. This module will focus on the two main areas of risk identification and risk control. Various risk control strategies will be explored and automated tools for risk assessment will also be investigated. Risk governance and compliance issues will also be addressed. Various protection mechanisms will also be considered.
Assessment: Coursework (100%)
*All transcripts are issued in UK credits.

Business Analytics

Module Code: 7BUIS024W | **Level 7** | **Semester 1**
Location: Cavendish | **UK Credit Value: 20** | **Equivalent Credit Value: US Credits 4 / ECTS credits 10***

This is a self–contained module in applied statistics and operational research (OR) for decision making that lays the foundations for more advanced modules in data mining, optimisation and simulation modelling. It covers the

essential of descriptive, predictive, and prescriptive analytics in an application driven manner and makes use of appropriate software tools to derive meaningful solutions.

Assessment: Portfolio (70%), In-Class Test/Assignment exam conditions (30%)
*All transcripts are issued in UK credits.

Data System Concepts and Fundamentals

Module Code: 7BUIS030W	**Level 7**	**Semester 1**
Location: Cavendish	**UK Credit Value: 20**	**Equivalent Credit Value: US Credits 4 / ECTS credits 10***

This module introduces the student to computer systems fundamentals and data systems fundamentals. The aim of the module is to ensure that the student has a deep understanding of the high-level systems and software that support data storage and retrieval to be able to work with such systems and to be able to critically and confidently operate with system stakeholders and technical partners such as data providers, storage, and data processing actors. Concepts of computer systems and data creation, storage, and retrieval systems shall be introduced as well as compliance and security. This knowledge shall be reinforced by practical sessions where the student shall create, store and retrieve complex data using standard tools, as well as have the opportunity to analyse and critically evaluate typical real-world data lifecycle scenarios.
Assessment: Practical Coursework (50%), Examination - closed book (50%)
*All transcripts are issued in UK credits.