

Module Catalogue

Computer Science

Postgraduate Study Abroad 2021/2

Semester 2

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					
7BUIS004W	Business Optimisation	7	Semester 2	20	US Credits 4 / ECTS credits 10*
7BUIS009W	Data Visualisation and Dashboarding	7	Semester 2	20	US Credits 4 / ECTS credits 10*
7BUIS010W	Data Warehousing and Business Intelligence	7	Semester 2	20	US Credits 4 / ECTS credits 10*
7BUIS021W	Simulation Modelling	7	Semester 2	20	US Credits 4 / ECTS credits 10*
7BUIS025W	Web and Social Media Analytics	7	Semester 2	20	US Credits 4 / ECTS credits 10*
7CSEF002W	Cyber Security Threats and Countermeasures	7	Semester 2	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

Business Optimisation

Module Code: 7BUIS004W

Location: Cavendish

Level 7

UK Credit Value: 20

Semester 2

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

Pre-requisite: 7BUIS024W Business Analytics or equivalent

The module provides an in-depth analysis of advanced topics in operational research (OR) such as discrete optimisation, multiple criteria optimisation and modern heuristic approaches.

Assessment: Coursework (50%), Examination - closed book (50%)

*All transcripts are issued in UK credits.

Data Visualisation and Dashboarding

Module Code: 7BUIS009W

Level 7

Semester 2

Location: Cavendish

UK Credit Value: 20

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

This module covers the theoretical and practical aspects of data visualisation including graphical perception, dynamic dashboard visualisations, and static data 'infographics'. Tools used include R and Tableau. The module prepares students for becoming data visualisation specialists.

Assessment: In-Class Test/Assignment exam conditions (30%), Coursework (70%)

*All transcripts are issued in UK credits.

Data Warehousing and Business Intelligence

Module Code: 7BUIS010W

Level 7

Semester 2

Location: Cavendish

UK Credit Value: 20

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

Business Intelligence, Data Mining and Analytics are a set of methods and technologies that transform raw data into meaningful and useful information. A Data Warehouse is the architecture or structure that supports these activities. This module teaches students how to build Data Warehouses by understanding their structures and the concept of multi-dimensional modelling. The focus is on Data Warehouse design, multi-dimensional modelling, the integration of multi-source data and business intelligence, aiming to support customer relationship management (CRM) and organisational change/management (CM).

Assessment: Coursework (50%), Coursework (50%)

*All transcripts are issued in UK credits.

Simulation Modelling

Module Code: 7BUIS021W

Level 7

Semester 2

Location: Cavendish

UK Credit Value: 20

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

The module focuses on the choice and use of appropriate simulation modelling approaches to treat real-world problems, developing solution(s) using powerful simulation software and explaining the business and industrial implications thereof. Relevant applications to problems such as stock control, reliability, project management, and service redesign will be considered in domains such as healthcare, supply-chain, and transport.

Assessment: Coursework (70%), Presentation Group (30%)

*All transcripts are issued in UK credits.

Web and Social Media Analytics

Module Code: 7BUIS025W

Level 7

Semester 2

Location: Cavendish

UK Credit Value: 20

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

This module provides a comprehensive overview of the techniques used to analyse, integrate and interpret web and social data. The first part of the module will cover the use of modelling to understand web usage and online user behaviour. During this component students will develop an understanding of how website data can be collected

through various methods, including clickstream data and cookies, and used to develop models that measure website impact and effectiveness. Specific topics and techniques covered include: A/B testing, multivariate testing, web metrics and presence, Google Analytics and online privacy. During the second part of the module students will be introduced to several contemporary analytical techniques that can be used to collect, model and interpret social media data for the purposes of collecting feedback and informing marketing decisions. Specific topics and techniques covered include sentiment and polarisation analysis, tokenisation, data pre-processing and topic modelling.

Assessment: In-Class Test/Assignment exam conditions (40%), Coursework (60%)

*All transcripts are issued in UK credits.

Cyber Security Threats and Countermeasures

Module Code: 7CSEF002W

Level 7

Semester 2

Location: Cavendish

UK Credit Value: 20

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

Pre-requisite: a background in Computer Science

Cyber security threats and countermeasures at physical and digital level focusing on behaviour of employees, home users, software developers. Developments in automated threats and counter-measures.

Assessment: Presentation (25%), Essay (75%)

*All transcripts are issued in UK credits.