

# Module Catalogue

## Science & Technology

### Postgraduate Study Abroad 2019/0

#### Semester 2

Module Code	Module Name	Level	Semester	UK Credit Value	Credit Equivalency
<b>Biomedical Sciences</b>					
7BIOM022W	<a href="#">Immunotherapy</a>	7	Semester 2	20	US Credits 4 / ECTS credits 10*
7BIOM039W	<a href="#">Advanced Molecular Biology</a>	7	Semester 2	20	US Credits 4 / ECTS credits 10*
<b>Computer Science and Engineering</b>					
7BDIN005W	<a href="#">Advanced Big Data Analytics</a>	7	Semester 2	20	US Credits 4 / ECTS credits 10*
7BUIS004W	<a href="#">Business Optimisation</a>	7	Semester 2	20	US Credits 4 / ECTS credits 10*
7BUIS009W	<a href="#">Data Visualisation and Dashboarding</a>	7	Semester 2	20	US Credits 4 / ECTS credits 10*
7BUIS010W	<a href="#">Data Warehousing and OLAP</a>	7	Semester 2	20	US Credits 4 / ECTS credits 10*
7BUIS021W	<a href="#">Simulation Modelling: Risk Processes and Systems</a>	7	Semester 2	20	US Credits 4 / ECTS credits 10*
7BUIS025W	<a href="#">Web and Social Media Analytics</a>	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*
<b>Psychology</b>					
7HPSY004W	Individual Differences: Health Stress and Disease	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.

## Biomedical Sciences

### Immunotherapy

**Module Code: 7BIOM022W**

**Level 7**

**Semester 2**

**Location: Cavendish**

**UK Credit Value: 20**

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

Manipulation of the immune system from passive immunisation to the use of novel recombinant molecules is addressed. Strategies available for therapy of inherited and acquired immunological disorders are addressed. Modern applications for gene and cell-based therapies are discussed. Novel targets for vaccination strategies are compared. The production of recombinant antibodies and their use in immunotherapy of a variety of different diseases is examined. Manipulation of cytokines is also explored. Immunotherapy of tumours, inflammatory conditions and autoimmune diseases are discussed.

**Assessment:** Coursework (25%), Presentation (25%), Examination - closed book (50%)

\*All transcripts are issued in UK credits.

### Advanced Molecular Biology

**Module Code: 7BIOM039W**

**Level 7**

**Semester 2**

**Location: Cavendish**

**UK Credit Value: 20**

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

Large databases yield information about DNA, RNA and protein variation between individuals and species and bioinformatics is a crucial component of molecular biology. Polymorphisms, epigenetics and microRNA have all greatly enhanced our knowledge about regulation of gene expression. This module will look at applications of a range of advanced molecular techniques such as next generation sequencing, microarrays, quantitative and multiplex PCR alongside our knowledge of OMICS databases.

**Assessment:** Presentation (50%), Examination - closed book (50%)

\*All transcripts are issued in UK credits.

## Computer Science and Engineering

## Advanced Big Data Analytics

**Module Code:** 7BDIN005W

**Level 7**

**Semester 2**

**Location:** Cavendish

**UK Credit Value:** 20

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

The module teaches students how to use Big Data Analytics at enterprises considering both the latest research achievements and technology trends. It gives an overview of the underlying concepts and technologies of Big Data Analytics, such as Hadoop, MapReduce, Hive, etc. It covers the whole data lifecycle from creating to processing data and from publishing and to preserving data.

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

\*All transcripts are issued in UK credits.

## Business Optimisation

**Module Code:** 7BUIS004W

**Level 7**

**Semester 2**

**Location:** Cavendish

**UK Credit Value:** 20

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

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

**Assessment:** Coursework (25%), Coursework (25%), 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 such as R and Tableau are used. The aim is to prepare students for becoming a data visualisation specialist.

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

\*All transcripts are issued in UK credits.

## Data Warehousing and OLAP

**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 analysis, cloud-based data warehousing, NOSQL OLAP, aiming to support better business decision making.

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

\*All transcripts are issued in UK credits.

## Simulation Modelling: Risk Processes and Systems

**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 (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\***

The module explores the use of modelling to analyse and measure both online presence and impact using web and social media data. During the module students will learn how to listen to social media conversations taking place and how such data can be transformed into actionable insight for a brand or organisation. Furthermore, we will study ways in which the effectiveness of modern websites are often judged, and how online web metrics can be used to drive performance. The overriding aim of the module is to equip students with the necessary technical skills and industrial knowledge for a career in the area of web or social media marketing.

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

\*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.

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# Psychology

## Individual Differences: Health Stress and Disease

**Module Code: 7HPSY004W**

**Level 7**

**Semester 2**

**Location: Cavendish**

**UK Credit Value: 20**

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

***Pre-requisite: undergraduate degree in Psychology***

This module provides students with an appreciation of the role of individual differences in health and illness; introduce the biological mechanisms by which stress can impact health; appreciation of the relationships between social, psychological and physiological factors in pain, self-harm and the placebo effect.

**Assessment:** Essay (50%), In-Class Test/Assignment exam conditions (50%)

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