

# Module Catalogue

## Computer Science

### English as a Foreign Language + Undergraduate Study Abroad Programme 2021/2

## Semester 2

At the end of the English section of the programme you must take a test which will determine your progress on the module part of the programme. Depending on your score you will be able to follow one of the following study pathways:

If you achieve a test result of 'B2 Low' you will follow this course of study

1. Academic Language for Disciplinary Study.
2. Academic Spoken Communication Skills for International Students
3. Interpersonal Global Communication

If you achieve a test result of 'B2 Intermediate' you will follow this course of study

Choose 2 modules from the following options:

1. Academic Language for Disciplinary Study.
  2. Academic Spoken Communication Skills for International Students
  3. Interpersonal Global Communication
- Plus one free choice of module at either level 4 or 5

If you achieve a test result of 'B2 High' you will follow this course of study

- You can choose 3 modules from Level 4, Level 5, or Level 6

Please note that all students are restricted to a maximum of 1 London Studies module, and 1 Practical MAD module upon submission of a portfolio that is then accepted as being of the required standard.

| Module Code             | Module Name                                    | Level | Semester   | UK Credit Value | Credit Equivalency              |
|-------------------------|--|-------|------------|-----------------|---------------------------------|
| <b>Computer Science</b> |  |       |            |                 |                                 |
| 4COSC005W               | <a href="#">Software Development II</a>        | 4     | Semester 2 | 20              | US Credits 4 / ECTS credits 10* |
| 5BUIS002W               | <a href="#">Business Analytics</a>             | 5     | Semester 2 | 20              | US Credits 4 / ECTS credits 10* |
| 5COSC004W               | <a href="#">Client Server Architecture</a>     | 5     | Semester 2 | 20              | US Credits 4 / ECTS credits 10* |
| 5COSC005W               | <a href="#">Mobile Application Development</a> | 5     | Semester 2 | 20              | US Credits 4 / ECTS credits 10* |

|           |  |   |            |    |                                 |
|-----------|--|---|------------|----|---------------------------------|
| 5COSC006W | Server-side Web Development                  | 5 | Semester 2 | 20 | US Credits 4 / ECTS credits 10* |
| 5MMCS002W | Usability Testing                            | 5 | Semester 2 | 20 | US Credits 4 / ECTS credits 10* |
| 5SENG001W | Algorithms: Theory Design and Implementation | 5 | Semester 2 | 20 | US Credits 4 / ECTS credits 10* |
| 6CCGD002W | Advanced Maths and Game AI                   | 6 | Semester 2 | 20 | US Credits 4 / ECTS credits 10* |
| 6CCGD003W | Networked Games and Security                 | 6 | Semester 2 | 20 | US Credits 4 / ECTS credits 10* |
| 6COSC002W | Security and Forensics                       | 6 | Semester 2 | 20 | US Credits 4 / ECTS credits 10* |
| 6COSC003W | Web Intelligence                             | 6 | 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

## Software Development II

**Module Code:** 4COSC005W

**Level** 4

**Semester** 2

**Location:** Cavendish

**UK Credit Value:** 20

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

***Pre-requisite:*** 4COSC001W *Programming Principles I or equivalent*

The module aims to develop skills in the selection and implementation of problem-solving algorithms while learning the Java programming language. It will strengthen abilities in the implementation of algorithms, in terms of adherence to requirements, design and modelling, through to the application of sound programming principles. The understanding of structures and advanced programming methods will also be developed, including sorting, the implementation of classes and methods, as well as more sophisticated data structures such as lists, queues, and stacks.

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

\*All transcripts are issued in UK credits.

## Business Analytics

**Module Code: 5BUIS002W**

**Level 5**

**Semester 2**

**Location: Cavendish**

**UK Credit Value: 20**

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

***Pre-requisite: 4BUIS002W Business Mathematics or equivalent***

This module introduces students to the Operational Research (OR) techniques, commonly used for business analytics, such as Linear programming, forecasting and simulation. It helps students to develop and analyse analytical models that support making effective business decisions.

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

\*All transcripts are issued in UK credits.

## Client Server Architecture

**Module Code: 5COSC004W**

**Level 5**

**Semester 2**

**Location: Cavendish**

**UK Credit Value: 20**

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

This module introduces the student to the various layers of software architectures, from the network to the application layer, to enable them to maintain, build and deploy a typical client server system.

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

\*All transcripts are issued in UK credits.

## Mobile Application Development

**Module Code: 5COSC005W**

**Level 5**

**Semester 2**

**Location: Cavendish**

**UK Credit Value: 20**

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

The Android mobile programming architecture. Restrictions of using small devices such as mobile phones tablets and wearables. Programming user interfaces, networking, persistent storage and multi-threading. Device profiling, application deployment and installation.

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

\*All transcripts are issued in UK credits.

## Server-side Web Development

**Module Code: 5COSC006W**

**Level 5**

**Semester 2**

**Location: Cavendish**

**UK Credit Value: 20**

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

This module will cover the analysis, design and implementation of commercial web applications from a programming and database perspective and will be suitable for students with a background in SQL, programming, HTML, and browser scripting. A server-side language will be covered to the depth required for implementing high-quality functional applications that appropriately fulfil user requirements.

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

\*All transcripts are issued in UK credits.

## Usability Testing

**Module Code: 5MMCS002W**

**Level 5**

**Semester 2**

**Location: Cavendish**

**UK Credit Value: 20**

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

The module provides students with essential skills and practice in a range of usability techniques, how to conduct usability studies and focuses on the role of the user within the design process. The importance of experimental design and statistical analysis is illustrated through real world examples. The ability to interpret and critically discuss results is stressed throughout.

**Assessment:** Group Coursework (60%), Examination - closed book (40%)

\*All transcripts are issued in UK credits.

## Algorithms: Theory Design and Implementation

**Module Code: 5SENG001W**

**Level 5**

**Semester 2**

**Location: Cavendish**

**UK Credit Value: 20**

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

The module equips the student with the theoretical and practical background of computing and computer science towards the problem solving strategies, design, implementation and evaluation of computationally efficient algorithms. Given the vast range of applicable problems, e.g., technology, economics, biosciences, society, environment, mathematics, game theory, the module particularly draws upon current real world problems.

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

\*All transcripts are issued in UK credits.

## Advanced Maths and Game AI

**Module Code: 6CCGD002W**

**Level 6**

**Semester 2**

**Location: Cavendish**

**UK Credit Value: 20**

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

### ***Pre-requisite: Programming experience required***

Creating robust artificial intelligence is one of the greatest challenges for game developers, yet the commercial success of a game is often dependent upon the quality of its AI. This module introduces an engagingly realistic and immersive experience in modern videogames for creating game terrains to simulate complex behaviour of game objects. The main focus of the module is to learn how to create an automatic random game world with metrics to generate human like intelligent behaviours primarily in non-player characters (NPCs). The algorithms and logic covered in this module are also widely used in a variety of computing sectors which will make the module a great choice for CS and SE students.

**Assessment:** Coursework (60%), Examination - closed book (40%)

\*All transcripts are issued in UK credits.

## Networked Games and Security

**Module Code: 6CCGD003W**

**Level 6**

**Semester 2**

**Location: Cavendish**

**UK Credit Value: 20**

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

### ***Pre-requisite: Programming experience required***

This module aims to provide a detailed understanding of the network infrastructures that are available and suitable for online games, including referencing to the controls that are included within systems and applications software and the steps used in their development such as Systems Development Life Cycle (SDLC), Application Environment and Security Control and Effectiveness of Application Security. It also covers a selection of topics that are related to distributed multimedia such as online chat and standards that are widely used for games interaction. The module will assess the limitations and problems of the technologies and the user interaction that have to be resolved.

**Assessment:** Practical Coursework (40%), Practical Coursework (60%)

\*All transcripts are issued in UK credits.

## Security and Forensics

**Module Code: 6COSC002W**

**Location: Cavendish**

**Level 6**

**UK Credit Value: 20**

**Semester 2**

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

This module examines various aspects of computer security and forensics giving a sound introduction to theoretical and practical areas such as network security, cryptography, security architecture and operations security. A substantial amount of work will be laboratory based involving the deployment of security tools, the hardening of operating systems and the analysis of compromised systems.

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

\*All transcripts are issued in UK credits.

## Web Intelligence

**Module Code: 6COSC003W**

**Location: Cavendish**

**Level 6**

**UK Credit Value: 20**

**Semester 2**

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

The module equip the students with the theoretical and practical knowledge to apply intelligent information technology on the Web in order to create the next generation of products, services and frameworks based on the internet for the sake of using the Web as a huge and trustworthy knowledge source for a variety of contemporary problems in society, environment, economy. The module draws upon many fields such as Web text mining and engineering, information retrieval and search engines, Semantic and Social web and the Web of data, which underpin the contemporary Web as a source of knowledge.

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

\*All transcripts are issued in UK credits.