

# PARTNERS ACADEMIC SUMMER SCHOOL 2025 Syllabus for Computing

## Subject Area

This syllabus is for PARTNERS applicants seeking to progress to the degrees of:

G400 BSc Computer Science

G450 BSc Computer Science (Game Engineering)

G600 BSc Computer Science (Software Engineering)

1195 BSc Computer Science (Cyber Security)

#### Aims

To allow students to demonstrate their potential to succeed in specified degree programmes by showing a grasp of entry-level subject-specific knowledge, understanding, cognitive and subject-specific skills.

## Learning Outcomes

A good knowledge and understanding of ...

- We aim to give students an understanding of the principles that underpin computational problem solving and abstraction, mainly through the practice of computer programming.
- In particular, we will provide an overview of object-oriented programming, and low-level programming and abstraction.
- Learning outcomes include a good knowledge and understanding programming concepts, computing fundamentals and different levels of abstraction

The ability to apply this knowledge and critical understanding to...

- Problem-solving
- Both program design and implementation
- The practice of the analysis and creation of computer programs in formal programming language

• Students will work on a number of exercises in the Python and then Java programming languages and for their formative assessment will submit one program in each language plus a Java quiz. The Python program will be one of the exercises introduced in the sessions, the Java program will have a spec introduced for the assignment. There will be different levels of difficulty for the Java program to accommodate the fact some students will have differing levels of programming experience to others. The quiz is a basic test of a student's understanding of Java.

Competence in...

- Computer programming and problem-solving
- The application of algorithmic thinking
- Logical decomposition of problems and solutions
- Communication of complex ideas simply and their expression via the medium of computer programs and their logical underpinnings

## Summer School Syllabus

Please see subject timetable for more information.

## **Activities for Personal Study**

Students will progress by guided, online programming and logical problem-solving exercises. Activities and necessary resources for personal study will be provided during the summer school.

## **On-Campus Teaching:**

Wednesday 2<sup>nd</sup> (PM), Thursday 3<sup>rd</sup> & Friday 4<sup>th</sup> July

#### **Online Teaching:**

Monday 30<sup>th</sup> June & Tuesday 1<sup>st</sup> July

## Formative Assessment Details

Two computer programs submitted via Canvas and a Canvas quiz.

Hand-in Method Digital

#### Assessment deadline Thursday 10<sup>th</sup> July