

DESCRIPTIONS OF ELECTIVE COURSES

Field of study	Computer Science Game Design and Development Programming
Level	first-cycle studies
Students admitted in the academic year	2024/2025
Semester in which the courses are selected	4
Semester in which the courses are conducted	5

Elective courses enable the acquisition of knowledge and development of skills important to the field of study but considering the student's individual interests.

This semester you can choose some elective courses, and the selected courses will be taken in the summer semester.

The course can be implemented if there is enough willing students (no less than 66% of students making their choice).

This semester, you will make your choice using a survey that will be available from April 20th (the survey will be active for one week). Students who do not make a choice will be administratively added to the courses that will be implemented.

In the summer semester of the 2025/26 academic year, students choose 1 courses out of 2 offered.

INTRODUCTION TO DATA SCIENCE

Learning content:

- Preparation of the work environment and introduction to programming in the selected scripting language (R and/or Python)
- Basic and complex data types in the scripting language of your choice (R and/or Python)
- Control instructions and loops (R and/or Python)
- Functions (R and/or Python)
- Object-oriented programming (R and/or Python)
- Data processing in various formats (e.g. JSON, XML, CSV, text, etc.) (R and/or Python)
- Input/output operations and database access (R and/or Python)
- Familiarization with the use of specialized libraries / modules (R and / or Python)
- Selected issues in visualization of data results (R and / or Python)
- Selected issues in the use of scripting languages (R and / or Python) in the field of machine learning and data minin
- Individual completion of a large practical assignment on the design and implementation of an application in a specialized scripting language (R and/or Python).

CLOUD TECHNOLOGIES

Learning content:

- Introduction to cloud services
- Building cloud computing and running a web server
- Introduction to server virtualization
- Working with data warehouses
- Building a database server
- Scaling and load balancing an existing architecture
- Designing cloud services