DESCRIPTIONS OF ELECTIVE COURSES

Field of study	INFORMATION TECHNOLOGY
Level	first-cycle studies
Students admitted in the academic year	2024/2025
Semester in which the courses are selected	**5**
Semester in which the courses are conducted	**6**

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 November 6th (the survey will be active until November 15th). Students who do not make a choice will be administratively added to the courses that will be implemented.

In the winter semester of the 2026/27 academic year, students choose 1 course out of 2 offered.
Of the two courses offered, one will be conducted – the one chosen by the greater number of students**.**

Advanced Network Technologies

This course is based on material you have already encountered in the course Network Technologies (CCNA). During the class, you will discuss topics such as:

- Concept and selection of selected routing protocols
- Routing relay configuration
- Filtering packet traffic in the network
- Configuring standard ACLs for IPv4
- Configuring Extended ACLs for IPv4
- Static NAT Configuration
- Configuring Dynamic NAT
- Troubleshooting NAT Configuration
- WAN Technology
- Network monitoring protocols
- Network device management

Analytics and Big Data in the IoT

This course is based on material you have already encountered in the Algorithms and Data Structures, Fundamentals of Programming, Databases. During the class, you will discuss topics such as:

- Building IoT systems using Raspberry Pi, Arduino, and a set of sensors
- Configuring Raspberry Pi and Arduino systems.
- Collecting and storing large datasets in an IoT system
- Programming Big Data solutions
- Using regular expressions in the processing of large datasets
- Preparing and using Python packages for data analysis and storage
- Various methods for programming Big Data solutions
- Data exploration—supervised learning
- Data exploration—unsupervised learning
- Classification of datasets and data quality analysis
- Data visualization