DESCRIPTIONS OF ELECTIVE COURSES

Field of study	Information Technology (Computer Science)
Level	first-cycle studies
Students admitted in the academic year	2024/2025
Semester in which the courses are selected	**3**
Semester in which the courses are conducted	**4**

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 at the beginning of November (the survey will be active for two weeks). Students who do not make a choice will be administratively added to the courses that will be implemented.

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

DEVNET TECHNOLOGIES

Course content:
- DevNet developer resources, use of Python, git version control system
- Use of the Unit Test framework
- Parsing XML, JSON, YAML in Python
- Integrating APIs in Python code
- Using Docker containers
- Using the Jenkins system
- Using Ansible to automate the installation process
- Automated testing using pyATS and Genie
- Using the NETCONF and RESTCONF models
- Designing automation of management processes

PROGRAMMING LANGUAGES 1

Course content:
- Advanced programming in C#: Extension methods, generic types, constraints, delegates, Func and Action, lambda expressions, events, introduction to reflection.
- Working with collections in C# using LINQ. IEnumerable interface, anonymous types, dynamic types.
- Basics of asynchronous, multithreaded, and parallel programming in C#. TPL library.

- Exception handling, memory management, garbage collector, IDisposable interface, finalizers, destructors.
- Accessing databases using Entity Framework. Database-first and code-first approaches. Using LINQ to Entities, the IQueryable interface.
- Modern language constructs in C#: records, tuples, pattern matching, switch expressions, local functions, nullable reference types, destructors, virtual static methods in interfaces.