Course Specification Document

Title	Computer Basics

Credits	2.5 ECTS

Aims	This course aims to provide the student with a basic and solid understanding of computer operation and operating systems, enabling them to use the computer in executing scientific tasks comfortably and efficiently.

Intended learning outcomes

On successful completion of this course, the student will be able to:

- Identify the basic components of a computer and the mechanism of program execution.
- Understand the role of the operating system in managing computer resources among programs.
- Familiarize himself with the file system and the command language in the operating system.
- Understand numbering systems to comprehend how data is represented in a computer.

Syllabus

- **Basic computer components:** Central Processing Unit (CPU), Random Access Memory (RAM), Input and Output peripherals.

- **Operating system:** Program execution, resource management.

- **Storage media:** Types of permanent storage (magnetic, electronic, optical), popular types and their features (capacity, speed, price).

- **File systems:** Files/Folders, hierarchical structure of the file system, relative path name / complete path name.

- **Command language in the operating system:** DOS commands, Linux commands.

- **Numbering systems:** Decimal, binary, octal, hexadecimal, conversion between numbering systems.

- **Program execution mechanism:** Program structure, execution sequence (the role of RAM + CPU), the execution sequence of an application and the role of the operating system.

- **Data representation in computers:** Representation of integers (positive and negative), representation of floating-point numbers, ASCII character representation.

- **Practical Office skills**: Using some applications of MS Office: Word, Excel.