Computer Studies

Course Title: Computer Studies	
Description	This course covers foundational and advanced topics in computer hardware, software, and programming. It begins with essential PC hardware concepts, including system architecture, microprocessors, memory, and the principles of Turing machines and Neumann architecture. The course then introduces software fundamentals, focusing on operating system tasks and advanced Excel skills. Students will learn Python programming, exploring input/output operations, and essential programming constructs like branching, loops, and library functions. Additionally, the course addresses basic algorithms, file management, computer viruses, and protection.
Semester	Autumn 2024
Neptun code	GEIAK201-B2A
Instructor	Dr. Nasraldeen Khleel
Credit Hours	2+2
Attendance Requirement	Students are required to attend at least 60% of the scheduled classes to be eligible for the course signature.
Final presentation	At the end of the semester, students will present their projects to the class. A complete project submission includes source code, documentation, and test cases.
Examination	The examination is written, and students will receive some theoretical questions and one practical task from the studied material.

Topics and Schedule

Lecture #	Topic
Lecture 1	Personal Computer (PC) Hardware Basic Concepts
Lecture 2	Internal hardware devices
Lecture 3	A functional system diagram of a computer, The microprocessor, The bus. Memory, libraries, Turing machine, Neumann principle
Lecture 4	Software basic concepts, Tasks of the operating system
Lecture 5	Introduction, Basic and Intermediate Excel Skills
Lecture 6	Advanced Excel knowledge
Lecture 7	Midterm Exam
Lecture 8	The general structure of Python programs
Lecture 9	Python Data Structures, In- and out
Lecture 10	The concept of title, value, indicator, Python language instructions, Branch organization, cycle organization
Lecture 11	Python library functions, basic algorithms interpreted on vectors
Lecture 12	Structures and basic file management, computer viruses and protection

- Lecture notes
- Exercises
- Midterm Exam Questions