COURSE SYLLABUS AND COURSE REQUIREMENTS
ACADEMIC YEAR 2023/2024 SEMESTER 1

Course title	***Foundation of Informatics***
Course Code	***IVB183ANMI***
Hours/Week: le/pr/lab	***1/0/2***
Credits	***3***
Degree Programme	***Computer Science Engineering BSc***
Study Mode	***Full time***
Requirements	***Term grade***
Teaching Period	***2023/2024/1***
Prerequisites	***None***
Department(s)	***System and Software Technologies***
Course Director	***Péter NOVÁK***
Teaching Staff	***Péter NOVÁK***

COURSE DESCRIPTION

A short description of the course (max. 10 sentences).
Neptun: Instruction/Subjects/Subject Details/Basic data/Subject description

The goal of the course is to provide an introduction in how computer hardware and software works. The students attending the course get an insight into computer history, the logic and physical build of a computer, a preparation for the Computer Architectures and Operating Systems course. In the second part of the course students will gain the necessary skills to use office applications for preparing their project works, reports and presentations, as needed for completing other subjects during their studies.

SYLLABUS

Neptun: Instruction/Subjects/Subject Details/Syllabus

1. GOALS AND OBJECTIVES

Goals, student learning outcome.
Neptun: Instruction/Subjects/Subject Details/Syllabus/Goal of Instruction

This lecture and practice-based course aims to give computer science engineering students a solid basis in information technology terminology and practical knowledge about general computer use through covering the following topics:
 • Computer and computer science history
 • Logical build of a computer and computer buses
 • The structure and operating principles of a CPU
 • Physical build of computers, various hardware components
 • Operating system principles and the boot process
 • Computer viruses and malware
 • Windows user interface. File-, service-, program- and disk management basics
 • Word or equivalent document processor
 • Excel or equivalent spreadsheet editor
 • PowerPoint or equivalent slideshow presenter

2. COURSE CONTENT

Neptun: Instruction/Subjects/Subject Details/Syllabus/Subject content

TOPICS

LECTURE	1. *topic* 2. *topic* 3. *topic* 4. *etc.*
PRACTICE	1. *topic* 2. *topic* 3. *topic* 4. *etc.*
LABORATORY PRACTICE	1. *topic* 2. *topic* 3. *topic* 4. *etc.*

DETAILED SYLLABUS AND COURSE SCHEDULE

ACADEMIC HOLIDAYS INCLUDED

LECTURE

week	Topic	Compulsory reading; page number (from … to …)	Required tasks (assignments, tests, etc.)	Completion date, due date
1.	Introduction to the lab environment. Orientation, requirements.	…	…	…
2.	Information, IT, computer science. Computer history.	Presentation 2		
3.	The logic build of a computer, buses, signal. Endianness, bitness. Harvard vs. Neumann architecture.	Presentation 3		
4.	The structure of a CPU, flags, registers. Memory hierarchy. DMA, IRQ.	Presentation 3		
5.	Hardware components: DRAM and SRAM, classification of memories and storage devices. Classification of computers. CPUs, MCUs, SoCs.	Presentation 4		
6.	Hardware components: System boards, CPU sockets, north and south bridge. Matching logical and physical components of a computer.	Presentation 4		
7.	Hardware components: Magnetic storage devices, flash and optical storage, principles, formats. Printers, plotters, display devices. Networking hardware. Cases, power supplies, and cooling solutions.	Presentation 5		
8.	Operating systems, system calls. Partitions, file systems. BIOS vs UEFI, the boot process. Viruses and	Presentation 6		

	malware.			
9.	Windows basics, user accounts and profiles, UAC. Windows user interface.	Presentation 7		
10.	File-, disk-, service-, software- and device management.	Presentation 7		
11.	Office, Word terminology. The ribbon bars. File formats. Paragraph and character formatting, styles. Making selections.	Presentation 8		
12.	Excel terminology, database vs. spreadsheet. Cell addressing, formatting. Diagram wizard. Mathematical, statistical, string, query functions, date arithmetic.	Presentation 9		
13.	Slideshow presentations with PowerPoint. Animations, interactions, timing. Slide templates. Importing objects from Excel and Word.	Presentation 10		

PRACTICE, LABORATORY PRACTICE

week	Topic	Compulsory reading; page number (from … to …)	Required tasks (assignments, tests, etc.)	Completion date, due date
1.				
2.	Numeric representation, number systems, Boolean algebra.			
3.	CPU instruction classes, machine code, assembly examples. Microcode.			
4.	Pipelining, hyperthreading, comparison of superscalar and SMP computers.			
5.	PC build/maintenance practice.			
6.	PC build/maintenance practice.			
7.	PC build/maintenance practice.			
8.	Installation of an operating system			
9.	Autumn break			
10.	**Mid-term test on theoretical knowledge (in computer lab).**			
11.	Control Panel, Service manager, Device manager, Task manager. File management on the command line, in Explorer and with Total Commander.			
12.	Instructor lead practice about document processing.			
13.	Instructor lead practice about working and programming spreadsheets.			
14.	Instructor lead practice on creating slideshow presentations.			
15.	**Office applications skill test (in practice in computer lab).**			

3. ASSESSMENT AND EVALUATION

(Neptun: Instruction/Subjects/Subject Details/Syllabus/Examination and Evaluation System)

ATTENDANCE

In accordance with the Code of Studies and Examinations of the University of Pécs, Article 45 (2) and Annex 9. (Article 3) a student may be refused a grade or qualification in the given full-time course if the number of class absences exceeds 30% of the contact hours stipulated in the course description.

Method for monitoring attendance *(e.g.: attendance sheet / online test/ register, etc.)*

attendance sheet

ASSESSMENT

Cells of the appropriate type of requirement is to be filled out (course-units resulting in mid-term grade or examination). Cells of the other type can be deleted.

Course resulting in mid-term grade *(PTE TVSz 40§(3))*

Mid-term assessments, performance evaluation and their ratio in the final grade *(The samples in the table to be deleted.)*

Type	Assessment	Ratio in the final grade
Theory test	*50 points*	*50 %*
Practical test	*50 points*	*50 %*

Opportunity and procedure for re-takes (PTE TVSz 47§(4))

The specific regulations for improving grades and resitting tests must be read and applied according to the general Code of Studies and Examinations. E.g.: all tests and assessment tasks can be repeated/improved at least once every semester, and the tests and home assignments can be repeated/improved at least once in the first two weeks of the examination period.

- on first week of exam period (theory and practice)
- on second week of exam period (theory and practice)

Grade calculation as a percentage

based on the aggregate performance according to the following table

Course grade	Performance in %
excellent (5)	85 % ...
good (4)	70 % ... 85 %
satisfactory (3)	55 % ... 70 %
pass (2)	40 % ... 55 %
fail (1)	below 40 %

The lower limit given at each grade belongs to that grade.

4. SPECIFIED LITERATURE

In order of relevance. (In Neptun ES: Instruction/Subject/Subject details/Syllabus/Literature)

COMPULSORY READING AND AVAILABILITY

[1.] Students will be provided with the PDF version of all slides and classroom presentations of the course.