ANEXA 1

SYLLABUS
University year 2023-2024
Year of study I / Semester I

1. Information on academic programme

1.1. University	**„1 Decembrie 1918" University of Alba Iulia**
1.2. Faculty	**FACULTY OF INFORMATICS AND ENGINEERING**
1.3. Department	**Informatics, Mathematics and Electronics**
1.4. Field of study	**Computer Science**
1.5. Cycle of study	**Undergraduate**
1.6. Academic programme / Qualification	**Computer Science / 251201, 251203, 251204**

2. Information of Course Matter

2.1. Course		**Computer Systems Architecture**			2.2. Code	**CSE101**	
2.3. Course Leader			Lect. Univ. Dr. Cucu Ciprian				
2.4. Seminar Tutor			Lect. Univ. Dr. Cucu Ciprian				
2.5. Academic Year	**I**	2.6. Semester	**I**	2.7. Type of Evaluation (E – final exam/ CE - colloquy examination / CA -continuous assessment)	**E**	2.8. Type of course (C– Compulsory, Op – optional, F - Facultative)	**O**

3. Course Structure

3.1. Weekly number of hours	4	3.2. course	**2**	3.3. seminar, laboratory	**2**
3.4. Total number of hours in the curriculum	56	3.5. course	**28**	3.6. seminar, laboratory	**28**
Allocation of time:					hours
Individual study of readers					**40**
Documentation (library)					**25**
Home assignments, Essays, Portfolios					**27**
Tutorials					**-**
Assessment					**2**
Other activities …….					**-**

3.7 Total number of hours for individual study	94
3.9 Total number of hours in the curriculum	150
3.10 Number of ECTS **	6

* 3.9. = 3.4. + 3.7.; numărul total de ore pe semestru trebuie calculat în funcție de nr. de credite (3.9.) și de volumul de muncă aferent unui credit (1 credit = 25 ore conform Ghidului de aplicare a ECTS).
** 3.10. = numărul de credite prevăzut a fi atribuit disciplinei prin planul de învățământ.

4. Prerequisites (where applicable)

4.1. curriculum-based	NA
4.2. competence-based	NA

5. Requisites (where applicable)

5.1. course-related	Room equipped with video projector / board / Microsoft Teams Platform
5.2. laboratory-based	Laboratory – computers / Microsoft Teams Platform

6. Specific competences to be aquired (chosen by the course leader from the programme general competences grid)

Professional competences	C6.1. Identifying base concepts and models for computing systems and networks C6.2. Identifying and explaining basic architectures for organizing and managing systems and networks
Transversal competences	NA

7. **Course objectives (as per the programme specific competences grid)**

7.1 General objectives of the course	- Learning fundamental concepts regarding computer systems architecture
7.2 Specific objectives of the course	- Ability to recognize computer system components - Ability to develop basic applications using assembly

8. **Course contents ***

8.1 Course	**Teaching methods**	**Hours**
1. Architecture, architecture types, Von Neumann architecture detalis	Lecture, discussions, presentation	2
2. Numbering systems: binary, decimal, hexadecimal. Conversions, operations.	Lecture, discussions, presentation	2
3. Logical gates. Transforming electrical impulse in operations. Binary adder	Lecture, discussions, presentation	2
4. The PC: system buses, CPU, coprocessor etc	Lecture, discussions, presentation	2
5. Memory segmentation	Lecture, discussions, presentation	2
6. CPU registers and memory adressing	Lecture, discussions, presentation	4
7. Assembly programming language: description, assembler variants, instructions	Lecture, discussions, presentation	6
8. Assembly programming:BIOS / DOS services	Lecture, discussions, presentation	4
9. Assembly programming: VIDEO modes	Lecture, discussions, presentation	4

References

1. Joldeş Remus, Emil Olteanu, *Arhitectura Calculatoarelor, Vol. 2*, *Instrucţiunile Familiei de microprocesoare 80X86*, Editura UAI, Seria Didactica 2006.
2. Joldeș Remus, Cucu Ciprian, Domșa Ovidiu, Tulbure Adrian, Joldeș Iulian, Despa Otilia, *Limbajul de asamblare prin exemple - Îndrumator*, Editura UAI, Seria Didactica 2008.
3. Tanenbaum, A., *Sisteme de operare modernă – Editia a II-a*, Editura Byblos, Bucureşti 2004.
4. Muscă Gheorghe, *Programarea în limbaj de asamblare*, Seria: Limbaje şi tehnici noi de programare, Editura TEORA, Bucureşti, 1997, pp.1-33, pp.34- 101, pp.123-167. Manualul a fost reeditat şi în 1998 şi în 1999.
5. Somnea D., Vlăduţ T., *Programarea în Assembler*, Seria: Calculatoare personale, Editura Tehnică, Bucureşti, 1992, pp. 8-15, pp. 16-32, pp. 35-67, pp. 68-84, pp. 85-108, pp. 109-113, pp. 114- 120, pp. 121-134, pp. 140-146, pp. 147-182, pp. 183-209.

8.2. **Seminars-laboratories**	**Teaching methods**	**Hours**
1. Working environment – DOSBox, TASM.	Discussion, presentation	1
2. DOS commands	Discussion, presentation, exercises	2
3. Numbering bases, conversions, operations	Discussion, presentation, exercises	2
4. Evaluation Quizz	Quizz	1
5. Hardware components	presentation	2
6. Using TASM, TLINK and the TD debugger	exercises	2
7. Assembly programming: basic instructions, advanced instructions, DOS functions, using the stack	exercises	12

8. Evaluation Quizz	Quizz	1
9. Assembly programming: video mode, procedures, macros	exercises	3
10. Finalizing laboratory work	Discussion	2

References

1. Joldeş Remus, Emil Olteanu, *Arhitectura Calculatoarelor, Vol. 2*, *Instrucţiunile Familiei de microprocesoare 80X86*, Editura UAI, Seria Didactica 2006.
2. Joldeș Remus, Cucu Ciprian, Domșa Ovidiu, Tulbure Adrian, Joldeș Iulian, Despa Otilia, *Limbajul de asamblare prin exemple - Îndrumator*, Editura UAI, Seria Didactica 2008.
3. Tanenbaum, A., *Sisteme de operare modernă – Editia a II-a*, Editura Byblos, Bucureşti 2004.
4. Muscă Gheorghe, *Programarea în limbaj de asamblare*, Seria: Limbaje şi tehnici noi de programare, Editura TEORA, Bucureşti, 1997, pp.1-33, pp.34- 101, pp.123-167. Manualul a fost reeditat şi în 1998 şi în 1999.
5. Somnea D., Vlăduţ T., *Programarea în Assembler*, Seria: Calculatoare personale, Editura Tehnică, Bucureşti, 1992, pp. 8-15, pp. 16-32, pp. 35-67, pp. 68-84, pp. 85-108, pp. 109-113, pp. 114- 120, pp. 121-134, pp. 140-146, pp. 147-182, pp. 183-209.

9. **Corroboration of course contents with the expectations of the epistemic community's significant representatives, professional associations and employers in the field of the academic programme**

NA

10. **Assessment**

Activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percentage of final grade
10.4 Course	Correct knowledge of concepts	*Final quizz (on PC) with questions and exercises*	50%
10.5 Seminar/laboratory	Ability to programm in assembly	*The two quizzes plus all the assignments during the semester.*	50%

10.6 Minimum performance standard:
- Minimum grade 5 for each of the evaluations, based on criteria
- Taking the exam în the regular evaluation session (the first one) depends on class attendance: 10 labs attended and 6 courses
- Maximum half of the required courses /labs can be recovered by solving extra assignments. Students must request such assignments no later than two weeks after the course/lab being recovered.

Submission date | Course leader signature | Seminar tutor signature

Date of approval by Department | Department director signature

Date of approval by Faculty Council | Signature of the Dean

Annex to syllabus (optional)

ANNEX TO SYLLABUS

b. Assesment – for a better grade

Activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percentage of final grade
10.4 Course	Answering questions, solving exercises	Quizz with theory and exercises	100 %
10.5 Seminar/laboratory	NA	NA	NA
10.6 Standard minim de performanţă			
A minimal grede of 5, according to quizz criteria			
Data completării	Semnătura titularului de curs		Semnătura titularului de seminar

c. Evaluare – restanţă

Activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percentage of final grade
10.4 Course	Answering questions, solving exercises	Quizz with theory and exercises	100 %
10.5 Seminar/laborator	NA	NA	NA
10.6 Standard minim de performanţă:			
A minimal grede of 5, according to quizz criteria			
Data completării	Semnătura titularului de curs		Semnătura titularului de seminar

*Formulare orientativă