



DISCIPLINE ACADEMIC SHEET

ACADEMIC YEAR 2025 – 2026

1. PROGRAMME DATA

1.1. Higher Education Institution	UNIVERSITY OF CRAIOVA
1.2. Faculty	Automation, Computers and Electronics
1.3. Department	Computers and Information Technology
1.4. Field of Study	Computers and Information Technology
1.5. Study level	L(License / Undergraduate)
1.6. Organizational form	IF
1.7. Study Program (name/code) /Qualification	Computers / L2060101010

2. Discipline data

2.1 Discipline Name	Computer Systems Architecture						
2.2 Course Activities Holder	Dan Măcaș						
2.3 Practical Activities Holder	Horatiu Popescu						
2.4 Study Year	2	2.5 Semester	1	2.6 Evaluation type	E	2.7 Discipline regime	DOB

3. Estimated total time (hours per semester of teaching activities)

3.1 Number of hours per week	5	in which: 3.2 course	2	3.3 seminar/laboratory/project	1/2/0
3.4 Total hours of curriculum	70	in which: 3.5 course	28	3.6 seminar/laboratory/project	14/28/0
3.7 Time distribution					hours
▪ Study after manual, course support, bibliography and notes					18
▪ Additional documentation in library, on specialized electronic platforms and field					10
▪ Training seminars / labs, homework, portfolios and essays					10
▪ Tutoring					-
▪ Examinations					10
▪ Other activities: consultations, student meetings					7
Total hours per individual activities	55				
3.8 Total hours per semester	125				
3.9 Number of credits	5				

4. Preconditions (where appropriate)

4.1 of curriculum	
4.2 of competence	

5. Conditions (where appropriate)

5.1. of the course	Physical presence
5.2. of seminar/ laboratory/project	Physical presence

6. COURSE OBJECTIVES – expected learning outcomes that are supported by completing and passing the course

Knowledge	Student: 1. Describes, identifies, and summarizes basic concepts and methods related to computer system architecture, microcontrollers, programming languages and techniques, as well as their application to concrete problems. 2. Identifies and explains the fundamental concepts, theories, and methods of the computer science field.
Skills (Abilities)	Student: 1. Evaluates, based on specific performance criteria, the type of computing system, its architecture, and the appropriate usage required for the efficient solution of concrete problems. 2. Selects and applies criteria, principles, and evaluation methods for identifying, simulating, and experimenting with processes in the field of computer science.
Responsibility and autonomy	Student: 1. Displays honourable, responsible, and ethical behaviour, in accordance with the law, to uphold the reputation of the profession. 2. Selects and analyses bibliographic sources specific to the field. 3. Demonstrates autonomy in learning and addressing issues specific to the domain.

7. Content

Content			
7.1 COURSE (content units)	Meeting Way	No hours	Teaching methods ¹⁰
1. Negative Numbers Representation	online	2	PowerPoint, using Google Meet
2. Forms of Information Representation	online	4	
3. Fixed Point Representation	online	4	
4. Floating Point Representation	online	4	
5. General Organization of Digital Computers	face to face	4	
6. Central Processing Unit	face to face	2	
7. Elementary Educational Computer	face to face	2	
8. CPU – peripheral devices communication	face to face	2	
9. Memory addressing techniques	face to face	4	
Bibliography			
1. D. Mancas, Computer Systems Architecture, textbook			
2. J.L. Hennessy and D.A. Patterson, Computer Architecture: A Quantitative Approach (7th Edition), 2025			
3. J. Ledin, Modern Computer Architecture and Organization, 2024			
4. S.G. Shiva, Computer Design and Architecture, Marcel Dekker, 2000			
5. A.J. Goor, Computer Architecture and Design, Addison - Wesley, 1989			
6. D.A. Patterson, J.L. Hennessey, Computer Organisation and Design, Hardware/Software Interface, Morgan Kaufmann, 1998			
7. xxx MCS - 80 Users Manual Santa Clara, INTEL Corporation, 1977			
7.2 Practical activities (topics/homework)	Meeting Way	No hours	Teaching methods ¹⁰
Laboratory			PowerPoint, using Google Meet
1. Negative Numbers Representation codes	online	2	
2. Information Representation	online	2	
3. Fixed Point Representation	online	4	
4. Floating Point Representation	online	4	
5. CPU model	face to face	2	
6. Elementary computer instructions.	face to face	4	
7. CPU – peripheral devices communication	face to face	2	
8. Memory addressing techniques	face to face	4	
9. Operations on stacks	face to face	2	
10. Final Test	face to face	2	
Seminar			
1. Negative Numbers Representation codes	online	2	
2. Fixed Point Representation	online	4	

3. Floating Point Representation	face to face	4
4. Memory addressing techniques	face to face	2
5. Operations on stacks	face to face	2
Bibliography 1. D. Mancas, Computer Systems Architecture, textbook 2. J.L. Hennessy and D.A. Patterson, Computer Architecture: A Quantitative Approach (7th Edition), 2025 3. J. Ledin, Modern Computer Architecture and Organization, 2024 4. S.G. Shiva, Computer Design and Architecture, Marcel Dekker, 2000 5. A.J. Goor, Computer Architecture and Design, Addison - Wesley, 1989 6. D.A. Patterson, J.L. Hennessy, Computer Organisation and Design, Hardware/Software Interface, Morgan Kaufmann, 1998 7. xxx MCS - 80 Users Manual Santa Clara, INTEL Corporation, 1977		

8. Correlating the content of the discipline with the expectations of representatives from the epistemic community, professional associations and representative employers in the field related to the program

The course presents the basic concepts and is correlated to the labor market.

9. Evaluation

Activity Type	9.1 Evaluation criteria	9.2 Evaluation methods	9.3 Final mark weight
9.4 Course	Minimum 50%	Written paper	70%
9.5 Practical activities	S:		
	L: Minimum 50%	Lab test	30%
	Pr:		
9.6 Minimum standard of performance (the minimum knowledge necessary to promote discipline and how to check the knowledge acquiring)			
Basic knowledge on the course and laboratory topics.			

Date of Completion	Signature of the Course Activities Holder,	Signature of the Practical Activities Holder,
23.08.2025		

Date of Approval in the Department	Signature of the Department Director,
25.08.2025	Ș.I.dr.ing. Nicolae ENESCU

Date of Approval in the Faculty	Signature of the Dean,
	Prof.dr.ing. Dorin ȘENDRESCU