SYLLABUS

1. Information regarding the programme

1.1 Higher education institution	Babeș-Bolyai University
1.2 Faculty	Mathematics and Computer Science
1.3 Department	Computer Science
1.4 Field of study	Computer Science
1.5 Study cycle	Bachelor
1.6 Study programme / Qualification	Artificial Intelligence

2. Information regarding the discipline

2.1 Name of the discipline (en) (ro)			C Programming Programare în C			
2.2 Course coordinator						
2.3 Seminar coordinator						
2.4. Year of study	1	2.5 Semester	1	2.6. Type of evaluation	C	2.7 Type of discipline	Optional
2.8 Code of the discipline		MLR5076				

3. Total estimated time (hours/semester of didactic activities)

3.1 Hours per week	3	Of which: 3.2 course	1	3.3 seminar/laboratory	2
3.4 Total hours in the curriculum	42	Of which: 3.5 course	14	3.6 seminar/laboratory	28

Time allotment:	hours
Learning using manual, course support, bibliography, course notes	7
Additional documentation (in libraries, on electronic platforms, field documentation)	7
Preparation for seminars/labs, homework, papers, portfolios and essays	7
Tutorship	5
Evaluations	7
Other activities:	

3.7 Total individual study hours	33
3.8 Total hours per semester	75
3.9 Number of ECTS credits	3

4. Prerequisites (if necessary)

4.1. curriculum	●
4.2. competencies	●

5. Conditions (if necessary)

5.1. for the course	Course room with videoprojector
5.2. for the seminar /lab activities	Laboratories with computers having Linux and Windows Operating systems accessed using username and password

6. Specific competencies acquired

Professional competencies	
Transversal competencies	• Performing the requested tasks according to the specified requirements and within the imposed deadlines, in compliance with the norms of professional ethics and moral conduct • Permanent information and documentation in the field of activity in Romanian and English • Concern for improving the results of the professional activity through involvement in the activities carried out

7. Objectives of the discipline (outcome of the acquired competencies)

7.1 General objective of the discipline	• Acquiring the main entities and concepts used in the standard C language. • Learning the basics of specific programming and the use of functions
7.2 Specific objective of the discipline	• Operators and expressions. • Control structures. • Data structures • IO operations with files. • Pointers. • Definition of user functions. • Memory classes and the C preprocessor.

8. Content

8.1 Course	Teaching methods	Remarks
Week 1 Introduction • data types • operators • expresions • instructions • standard files I/O	Presentation, discussions, case study	
Week 3 Control structures. • if • switch • for • while • break, continue	Presentation, discussions, case study	

Week 5. Data structures. • arrays • structs • union • strings • bit fields • command line arguments	Presentation, discussions, case study	
Week. 7 Standard IO C library; file access. • fopen, fclose • fgets, fprintf, fscanf • fread, fwrite, fseek	Presentation, discussions, case study	
Sapt. 9 Pointers. • definition, operations • malloc, calloc and free. • pointer arithmetics • pointers vs arrays	Presentation, discussions, case study	
Week 11 User defined functions • prototipe • argument passing • returned values • recursive calls	Presentation, discussions, case study	
Week 13 Memory classes and preprocessor • classes: automatic, external, static • preprocessor: #include, #define, #if, typedef	Presentation, discussions, case study	

Bibliography

1. BOIAN F, VANCEA A. IURIAN S Limbajul C, culegere de probleme. Lito UBB, 1992
2. COSTEA D. Inițiere în limbajul C. Ed. Teora, 1997.
3. KALICHARAN N. C By Example. Cambridge University Press, 1996
4. KERNINGHAN B.W., RITCHIE D.M The C Procramming Language -- Ansi C. Prentice Hall, 1988.
5. NEGRESCU L. Limbajele C și C++ pentru începători. Ecd. Albastră, Grupul Microinformatica, 2001
6. C Language Tutorial http://www.physics.drexel.edu/courses/Comp_Phys/General/C_basics/
7. C Tutorial http://www.cprogramming.com/tutorial/c-tutorial.html

8.1 Seminar / laboratory	Teaching methods	Remarks
Each course has two laboratories affected. In the within them illustrative demonstrations are first made and relevant examples on the subject of the course. Then the students, alone or in teams, solve problems received as assignments in the laboratory or as homework	Presentation, discussions, case study	

Bibliography

9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations and representative employers within the field of the program

- The course is aligned with IEEE and ACM recommendation for Computer science curricula and specialization.
- The course will provide an overview of computer science domains and will offer a general perspective of computer science field.
- The course will provide necessary skills, abilities and knowledge for working environment and organizations in the field of computer science.

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.4 Course	Applications of methods and practical knowledge	Written exam.	50%
	Homework problem solving		
10.5 Seminar/lab activities	Ability of solving problems in a limited time period during lab activities		50%
10.6 Minimum performance standards			
➢ For each criterion the minimum grade is 5.			

Date	Signature of course coordinator	Signature of seminar coordinator
25 April 2023	....	....

Date of approval	Signature of the head of department
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