SYLLABUS [1]

1. Information about the program

1.1 Higher education institution	Politehnica University Timisoara
1.2 Faculty[2]/ Department [3]	Civil Engineering/AIA Department
1.3 Chair	–
1.4 Field of study (name/code[4])	Civil Engineering/80
1.5 Study cycle	Bachelor
1.6 Study program (name/code/qualification)	Civil Engineering (in English) / 10 / Engineer

2. Information about the discipline

2.1 Name of discipline/ formative category[5]			Introduction to Computer Programming				
2.2 Coordinator (holder) of course activities			Lect.eng. Adriana ALBU, PhD.				
2.3 Coordinator (holder) of applied activities[6]			Lect.eng. Adriana ALBU, PhD.				
2.4 Year of study[7]	1	**2.5** Semester	1	**2.6** Type of evaluation	D	**2.7** Type of discipline[8]	DI

3. Total estimated time – hours / semester: direct teaching activities (fully assisted or partly assisted) and individual training activities (unassisted) [9]

3.1 Number of fully assisted hours / week	4 of which:	**3.2** course	2	**3.3** seminar / laboratory / project	2
3.1* Total number of fully assisted hours / semester	56 of which:	**3.2*** course	28	**3.3*** seminar / laboratory / project	28
3.4 Number of hours partially assisted / week	of which:	**3.5** training		**3.6** hours for diploma project elaboration	
3.4* Total number of hours partially assisted / semester	of which:	**3.5*** training		**3.6*** hours for diploma project elaboration	
3.7 Number of hours of unassisted activities / week	2 of which:	additional documentary hours in the library, on the specialized electronic platforms and on the field			0.5
		hours of individual study after manual, course support, bibliography and notes			0.5
		training seminars / laboratories, homework and papers, portfolios and essays			1
3.7* Number of hours of unassisted activities / semester	28 of which:	additional documentary hours in the library, on the specialized electronic platforms and on the field			7
		hours of individual study after manual, course support, bibliography and notes			7
		training seminars / laboratories, homework and papers, portfolios and essays			14
3.8 Total hours / week [10]	6				
3.8* Total hours /semester	84				
3.9 Number of credits	4				

[1] The form corresponds to the Discipline File promoted by OMECTS 5703 / 18.12.2011 and to the requirements of the ARACIS Specific Standards valid from 01.10.2017.
[2] The name of the faculty which manages the educational curriculum to which the discipline belongs
[3] The name of the department entrusted with the discipline, and to which the course coordinator/holder belongs.
[4] The code provided in HG no.140 / 16.03.2017 or similar HGs updated annually shall be entered.
[5] Discipline falls under the educational curriculum in one of the following formative disciplines: Basic Discipline (DF), Domain Discipline (DD), Specialist Discipline (DS) or Complementary Discipline (DC).
[6] Application activities refer to: seminar (S) / laboratory (L) / project (P) / practice/training (Pr).
[7] Year of studies in which the discipline is provided in the curriculum.
[8] Discipline may have one of the following regimes: imposed discipline (DI), optional discipline (DO) or optional discipline (Df).
[9] The number of hours in the headings 3.1 *, 3.2 *, ..., 3.8 * is obtained by multiplying by 14 (weeks) the number of hours in headings 3.1, 3.2, ..., 3.8. The information in sections 3.1, 3.4 and 3.7 is the verification keys used by ARACIS as: (3.1) + (3.4) ≥ 28 hours / wk. and (3.8) ≤ 40 hours / wk.
[10] The total number of hours / week is obtained by summing up the number of hours in points 3.1, 3.4 and 3.7.

4. Prerequisites (where applicable)

4.1 Curriculum	• not applicable
4.2 Competencies	• not applicable

5. Conditions (where applicable)

5.1 of the course	• Projector and whiteboard
5.2 to conduct practical activities	• 18 computers (with C programming environment), projector and whiteboard

6. Specific competencies acquired through this discipline

Specific competencies	• Acquiring the basics of programming
Professional competencies ascribed to the specific competencies	• Design of structural elements in civil engineering, specific to graduated study programme • Technological and economical design for the erection, operation and maintenance works in civil engineering, specific to graduated study programme • Organization and management of the execution, operation and maintenance procedures for civil, industrial and agricultural constructions
Transversal competencies ascribed to the specific competencies	• Documentation in Romanian and foreign language, in view of professional and personal development, via continuous learning and efficient adaptation to the new technical specifications

7. Objectives of the discipline (based on the grid of specific competencies acquired - pct.6)

7.1 The general objective of the discipline	• Acquiring the basics of programming, with examples in the C programming language.
7.2 Specific objectives	• Acquiring an overview of computers domain and of programming. • Designing and implementing C programs of small and medium complexity. • Obtaining skills regarding testing and debugging programs. • Creating a correct programming style.

8. Content [11]

8.1 Course	Number of hours	Teaching methods [12]
Introduction	1	Presentation of theoretical aspects,
Programming basics	3	

[11] It details all the didactic activities foreseen in the curriculum (lectures and seminar themes, the list of laboratory works, the content of the stages of project preparation, the theme of each practice stage). The titles of the laboratory work carried out on the stands shall be accompanied by the notation "(*)".
[12] Presentation of the teaching methods will include the use of new technologies (e-mail, personalized web page, electronic resources etc.).

Logical diagrams (The elements of a logical diagram)	3	examples, discussions, solved problems, questions
Data and data types (General concepts, Data types description)	3	
A first C program (Stages of a C program implementation, The structure of a C program)	3	
Library functions (Input/output functions, Mathematical functions, Conversion functions, Other functions)	3	
Instructions (Simple instructions, Alternative instructions, Repetitive instructions)	3	
Arrays (Single-dimensional arrays, Two-dimensional arrays)	3	
Strings (Characters, Strings)	3	
Pointers (Pointer variables, Operations with pointers, Pointers and other elements)	3	

Bibliography [13]

1. Adriana ALBU: "Computer Programming – The C Language", Conspress, Bucuresti 2013, ISBN 978-973-100-270-5

2. Brian KERNIGHAN, Dennis RITCHIE: "The C Programming Language", 2nd Edition, Prentice-Hall, 1988, ISBN 0-13-110370-9

3. "Programming Tutorials – C Tutorial", http://www.cprogramming.com/tutorial/c-tutorial.html, accessed: February 2015

8.2 Applied activities [14]	Number of hours	Teaching methods
Logical diagrams	2	Theoretical presentations, discussions, explanations, case studies
Data and data types	2	
A first C program	2	
Library functions	6	
Instructions	6	
Arrays	4	
Strings	4	
Pointers	2	

Bibliography [15]

1. Adriana ALBU: "Computer Programming – The C Language", Conspress, Bucuresti, 2013, ISBN 978-973-100-270-5

9. Corroboration of the content of the discipline with the expectations of the main representatives of the epistemic community, professional associations and employers in the field afferent to the program

[13] At least one title must belong to the discipline team and at least one title should refer to a reference work for discipline, national and international circulation, existing in the UPT library.
[14] Types of application activities are those specified in footnote 5. If the discipline contains several types of applicative activities then they are sequentially in the lines of the table below. The type of activity will be in a distinct line as: "Seminar:", "Laboratory:", "Project:" and / or "Practice/training".
[15] At least one title must belong to the discipline team.

- The programming basics are important for some disciplines (belonging to the curriculum of this study program) that have connections to software development (e.g. Applied Computer Programming).
- Main representative employers in the field of this study program ask for general programming knowledge.
- The understanding of a programming language and the ability to use it develop valuable skills and competences for numerous further requirements.

10. Evaluation

Type of activity	**10.1** Evaluation criteria [16]	**10.2** Evaluation methods	**10.3** Share of the final grade
10.4 Course	Two multiple choices written tests (30 theoretical and practical questions; each question has five possible answers of which one only is correct)	Written examination	2/3
10.5 Applied activities	**S:**		
	L: Two practical tests (the following aspects are appreciated: a proper implementation, an adequate way of presenting solutions, correct answers to the questions)	Practical examination (on a computer)	1/3
	P[17]**:**		
	Pr:		
10.6 Minimum performance standard (minimum amount of knowledge necessary to pass the discipline and the way in which this knowledge is verified [18])			
• In order to pass the multiple choices written tests, 50% of the questions must have correct answers (for each test). • The practical tests are passed if the programs are functional and solve the minimum requirements. • The final mark is calculated only if the student obtains marks greater than or equal to 5 for all the examinations (written and practical).			

Date of completion	**Course coordinator (signature)**	**Coordinator of applied activities (signature)**
22 January 2018	.....	.....
Head of Department (signature)	**Date of approval in the Faculty Council [19]**	**Dean (signature)**
.....		.....

[16] Syllabus must contain the procedure for assessing the discipline, specifying the criteria, methods and forms of assessment, as well as specifying the weightings assigned to them in the final grade. The evaluation criteria shall be formulated separately for each activity foreseen in the curriculum (course, seminar, laboratory, project). They will also refer to the forms of verification (homework, papers, etc.)

[17] In the case where the project is not a distinct discipline, this section also specifies how the outcome of the project evaluation makes the admission of the student conditional on the final assessment within the discipline.

[18] It will not explain how the promotion mark is awarded.

[19] The endorsement is preceded by the discussion of the board's view of the study program on the discipline record.