SYLLABUS [1]

1. Information about the program

1.1 Higher education institution	Politehnica University Timisoara
1.2 Faculty[2]/ Department [3]	Civil Engineering/CMMC
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]	Applied Computer Programming						
2.2 Coordinator (holder) of course activities	Lect.eng. Dan Pintea, PhD.						
2.3 Coordinator (holder) of applied activities[6]	Lect.eng. Dan Pintea, PhD.						
2.4 Year of study[7]	1	**2.5** Semester	2	**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				

4. Prerequisites (where applicable)

4.1 Curriculum	• Introduction to Computer Programming
4.2 Competencies	• Documents editing, Programming basics using the VBA programming language

5. Conditions (where applicable)

5.1 of the course	• Projector and whiteboard
5.2 to conduct practical activities	• 16 computers（with Microsoft Office）, projector

6. Specific competencies acquired through this discipline

Specific competencies	• Acquiring particular knowledge of programming for Civil Engineers, Documents editing and Data processing
Professional competencies ascribed to the specific competencies	• Design of structural elements in civil engineering, specific to graduated study program • Technological and economical design for the erection, operation and maintenance works in civil engineering, specific to graduated study program • 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	• Thoroughgoing study of the programming field, with specific examples in the VBA programming language, Documentation elaboration in Microsoft Office.
7.2 Specific objectives	• Acquiring particular knowledge of programming that can be applied on specific domains. • Designing and implementing VBA programs useful for civil engineers. • Creating a correct programming style, and fast editing.

8. Content [11]

8.1 Course	Number of hours	Teaching methods [12]
Introduction to Microsoft Word. User Interface. Working with files. Creating and saving documents. Page setup. ）	2	Presentation of theoretical aspects,

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[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.).

Character formatting. Fonts and characters. Paragraph formatting, tabulators, Inserting tables, formatting tables. Equation editing	4	examples, discussions, solved problems, questions
Introduction to Microsoft Excel. User Interface, Working with files. Creating and saving documents. Entering text and numbers, Cells formatting, Cells formatting. Simple and complex formulas, Cell editing. Absolute and relative references.	4	
Charts in Excel. Selecting the correct chart for data representation. Formatting charts.	2	
Introduction to algorithms. Linear algorithms, Loops, Conditional. From algorithm to a programming language.	2	
Simple functions in VBA Excel. Function parameters. Returning values form functions. Linear, Conditional and Loops	4	
Bisection method for root finding, Newton-Raphson for root finding. Methods for determining the value of integrals	4	
Arrays in VBA. One dimensional or two dimensional arrays. Passing arrays to functions. Returning arrays.	6	

Bibliography [13]

1. Cosmin Muşat, Gheorghe Belea, Dan Pintea, Carmen Grecea, Beatrice Vîlceanu, Roberta Gridan, Măsurători terestre - concepte, vol.I, Ed. Politehnica, 2012

2. John Walkenbach, Excel VBA Programming For Dummies, Wiley Publishing Inc., Indianapolis, 2004

3. Patrick Blattner, Laurie Ulrich, Ken Cook, Timothi Dyck , Totul despre Microsoft Excel 2000, Bucuresti, Editura Teora, 2002

4. Peter Norton, Jill T. Freeze, Wayne S. Freeze, Microsoft Office 2000, Bucuresti, Editura Teora, 2011..

8.2 Applied activities [14]	Number of hours	Teaching methods
Create a new Word documents. Page setup. Entering text. Text editing. Formatting characters and paragraphs, Tables and formatting tables. Equations in Word documents	6	Theoretical presentations, discussions, explanations, case studies
Create a new Excel document. Entering text and numbers. Inserting simple and complex formulas. Creating charts, Formatting charts.	6	
Create a simple function in VBA Excel. Function parameters. Returning values from functions. Linear algorithm examples, Conditional functions Loops.	8	
Bisection method for root finding, Newton-Raphson for root finding. Methods for determining the value of integrals	2	
Arrays in VBA. One dimensional or two dimensional arrays. Passing arrays to functions. Returning arrays	6	

Bibliography [15]

1.Cosmin Muşat, Gheorghe Belea, Dan Pintea, Carmen Grecea, Beatrice Vîlceanu, Roberta Gridan, Măsurători terestre - concepte, vol.I, Ed. Politehnica, 2012

2. John Walkenbach, Excel VBA Programming For Dummies, Wiley Publishing Inc., Indianapolis, 2004

3. Patrick Blattner, Laurie Ulrich, Ken Cook, Timothi Dyck , Totul despre Microsoft Excel 2000, Bucuresti, Editura Teora, 2002

4. Peter Norton, Jill T. Freeze, Wayne S. Freeze, Microsoft Office 2000, Bucuresti, Editura Teora, 2011.

[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.

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

- The understanding of documents editing and programming in VBA Excel language and the ability to use it develops valuable skills and competences for future civil engineers.

10. Evaluation

Type of activity	10.1 Evaluation criteria [16]	10.2 Evaluation methods	10.3 Share of the final grade
10.4 Course	Multiple choices examination with up to 30 questions for assessing the theoretical skills.	Quiz on a computer	1/2
10.5 Applied activities	**S:**		
	L: Two practical tests: one in Word and Excel to evaluate the editing skills, and a second test in VBA Excel to evaluate the programming knowledge	Practical examination (on a computer)	1/2
	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 quiz, 50% of the questions must have correct answers (for each test).

- The practical tests are passed if the documents meet the minimum requirements expressed on the test sheet and 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 (theoretical and practical).

Date of completion	**Course coordinator (signature)**	**Coordinator of applied activities (signature)**
22 January 2019		
	……………………….…………	…………………….…………
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.