

SYLLABUS ¹

1. Information about the program

1.1 Higher education institution	Universitatea Politehnica Timișoara
1.2 Faculty ² / Department ³	Faculty of Civil Engineering / Department of Steel Structures and Structural Mechanics
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	Engineering graphics / DF						
2.2 Coordinator (holder) of course activities	senior lecturer, PhD, Dan Pintea						
2.3 Coordinator (holder) of applied activities ⁶	senior lecturer, PhD, Dan Pintea						
2.4 Year of study ⁷	2	2.5 Semester	3	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
		hours of individual study after manual, course support, bibliography and notes			1
		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			
		hours of individual study after manual, course support, bibliography and notes			14
		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	•
4.2 Competencies	• Physics and Mathematical operations

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.

5. Conditions (where applicable)

5.1 of the course	<ul style="list-style-type: none"> The course is presented on a PC in an interactive presentation mode
5.2 to conduct practical activities	<ul style="list-style-type: none"> The lab works consist of drawings realised on individual PC's by each student, based on the assigned lab requirements given for each student as a pdf document

6. Specific competencies acquired through this discipline

Specific competencies	<ul style="list-style-type: none"> Learn to manage Computer Aided Drafting (CAD) in order to realize engineering drawings
Professional competencies ascribed to the specific competencies	<ul style="list-style-type: none"> Recognizing typical structures and structural elements, specific to the graduated study programme Design of structural elements in civil engineering, specific to graduated study programme
Transversal competencies ascribed to the specific competencies	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> The course aims to introducing Computer Aided Drafting (CAD) and development of practical skills in AutoCAD. The principles of Computer Aided Drafting are introduced, which are applied using AutoCAD software. After following this course, students should be able to realize engineering drawings, create dimensions, hatches and annotations, and plot the drawings.
7.2 Specific objectives	<ul style="list-style-type: none">

8. Content¹¹

8.1 Course	Number of hours	Teaching methods ¹²
Introduction to CAD: Definition of basic terms, principles and advantages of CAD. AutoCAD software package user interface. Types of coordinates and command techniques. Snap and grid.	2	The course is presented on a PC using screen sharing software on students' PC's. The requirements for the lab works are given individually as pdf documents to the students. Both the lecture notes and lab
Drawing objects: Lines, points, rectangles, polygons, polylines, circles, ellipses, arcs, donuts, splines. Object snap settings, running object snap and overrides. Zooming and panning through a drawing.	6	
Modifying objects: Implied windowing, noun/verb selection and filters. Modifying commands: erase, copy, mirror, offset, array, move, rotate, scale, stretch, lengthen, trim, extend, break, chamfer, fillet, explode	6	
Object properties: Creating, using and modifying layers. Object colour,	4	

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.).

linetype, and lineweight. Linetype scales. Changing object properties.		works are accessible on the web page of the course
Blocks, Hatching: Creating blocks in AutoCAD. Adding block attributes. Creating and modifying hatches. Using text in AutoCAD.	4	
Dimensioning: Creating dimensions and dimension styles	4	
Plotting drawings: Model and Paper Space. Page setup and drawing plotting	2	

Bibliography ¹³

1. <http://dan.ct.upt.ro/graphics/support.htm>
2. Ellen Finkelstein, "AutoCAD 2004 Bible", published by Hungry Minds Inc., New York, 2003
3. Bill Burchard, David Pitzer, "Totul despre AutoCAD 2000" Bucuresti, Editura Teora, 2001

8.2 Applied activities ¹⁴

Number of hours

Teaching methods

Introduction to CAD: Definition of basic terms, principles and advantages of CAD. AutoCAD software package user interface. Types of coordinates and command techniques. Snap and grid.	2	The course is presented on a PC using screen sharing software on students' PC's. The requirements for the lab works are given individually as pdf documents to the students. Both the lecture notes and lab works are accessible on the web page of the course
Drawing objects: Lines, points, rectangles, polygons, polylines, circles, ellipses, arcs, donuts, splines. Object snap settings, running object snap and overrides. Zooming and panning through a drawing	6	
Modifying objects: Implied windowing, noun/verb selection and filters. Modifying commands: erase, copy, mirror, offset, array, move, rotate, scale, stretch, lengthen, trim, extend, break, chamfer, fillet, explode.	6	
Object properties: Creating, using and modifying layers. Object colour, linetype, and lineweight. Linetype scales. Changing object properties.	4	
Blocks, Hatching: Creating blocks in AutoCAD. Adding block attributes. Creating and modifying hatches. Using text in AutoCAD.	4	
Dimensioning: Creating dimensions and dimension styles.	4	
Plotting drawings: Model and Paper Space. Page setup and drawing plotting	2	

Bibliography ¹⁵

1. <http://dan.ct.upt.ro/graphics/support.htm>
2. Ellen Finkelstein, "AutoCAD 2004 Bible", published by Hungry Minds Inc., New York, 2003
3. Bill Burchard, David Pitzer, "Totul despre AutoCAD 2000" Bucuresti, Editura Teora, 2001

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 discipline is in accordance with the requirements needed by civil engineers to be able to create execution plans.
- The content was updated to keep in touch with the requirements of the work market

10. Evaluation

Type of activity	10.1 Evaluation criteria ¹⁶	10.2 Evaluation methods	10.3 Share of the final grade
10.4 Course		A complex drawing which evaluates all the	50%

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.

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.)

		knowledges presented during the course hours	
10.5 Applied activities	S:		
	L:	Two midterm tests, consisting of two drawings. The average of the two test will result in the practical works grade	50%
	P¹⁷:		
	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)			
<ul style="list-style-type: none"> Both grades, for evaluating the course skills and the practical works skills must be at least 5 			

Date of completion

**Course coordinator
(signature)**

**Coordinator of applied activities
(signature)**

**Head of Department
(signature)**

**Date of approval in the Faculty
Council ¹⁹**

**Dean
(signature)**

12.02.2018

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.