

SYLLABUS

1. Data about the program of study

1.1	Institution	The Technical University of Cluj-Napoca
1.2	Faculty	Railways, Roads and Bridges
1.3	Department	Civil Engineering
1.4	Field of study	Bachelor of Science
1.5	Cycle of study	C.I.A.C. (in English) / engineer
1.6	Program of study/Qualification	Full time
1.7	Form of education	Railways, Roads and Bridges
1.8	Subject code	24.00

2. Data about the subject

2.1	Subject name			Technical drawing and Infographics II						
2.2	Subject area			Civil Engineering						
2.3	Course responsible/lecturer			Discipline without course						
2.4	Teachers in charge of seminars			Assist. Prof. PhD. Eng. Nerişanu Raluca – Raluca.Nerisanu@cfdp.utcluj.ro Assist. PhD. Eng. Bărbos Gheorghe, Gheorghe.Barbos@cfdp.utcluj.ro						
2.5	Year of study	II	2.6	Semester	2.7	Assessment	Exam	2.8	Subject category	FD/ID

3. Estimated total time

3.1	Number of hours per week	2	3.2	of which, course:	0	3.3	applications:	2
3.4	Total hours in the curriculum	28	3.5	of which, course:	0	3.6	applications:	28
Individual study								47 hours
Manual, lecture material and notes, bibliography								17
Supplementary study in the library, online and in the field								8
Preparation for seminars/laboratory works, homework, reports, portfolios, essays								17
Tutoring								2
Exams and tests								3
Other activities								-
3.7	Total hours of individual study	47						
3.8	Total hours per semester	75						
3.9	Number of credit points	3						

4. Pre-requisites (where appropriate)

4.1	Curriculum	"Descriptive Geometry" and "Technical drawing and Infographics I" classes passed; Computer programming classes passed.
4.2	Competence	N/A

5. Requirements (where appropriate)

5.1	For the course	N/A
5.2	For the applications	Cluj-Napoca, Observatorului Street No. 72-74 – Classrooms equipped with computers: O204, O209 – onsite

6. Specific competences

Professional competences	Theoretical knowledge (what to know)	<ul style="list-style-type: none"> to possess knowledge on plane and space projection; to know the norms and the conventions for representation of structures used in civil engineering; to make drawings using various software programmes for civil engineering graphics, complying with the norms and the rules stipulated in the current standards;
	Gained skills	<p>After completing the discipline, the students will be able to:</p> <ul style="list-style-type: none"> graphically express themselves, by making free hand sketches, drawings with geometry tools and with computer based graphical software (AUTOCAD); represent various structural units and sections through projections (plane, elevations).
	Acquired skills	<p>After completing the discipline, the students will be able to:</p> <ul style="list-style-type: none"> to draw specific drawings with computer graphics software help (AUTOCAD); to read and understand all forms of graphical representations.
Cross competences		<ul style="list-style-type: none"> applying effective strategies and responsible work, punctuality, responsibility and personal accountability based on principles, norms and values of professional ethics; to produce the drawing part and the technical documentation required; acquainting with specific roles and teamwork activities; to make accurate and correct graphical works according to the representation norms in force; discussing about the applications with the teacher who leads the classes and with the colleagues; disseminate the results.

7. Discipline objectives (as results from the *key competences gained*)

7.1	General objective	Recognition of the elements and structures of civil engineering constructions, specific for the program of study graduated
7.2	Specific objectives	Graphical representation at the scale for the designed or existing building elements (survey-based) using software for engineering graphics (AutoCAD)

8. Contents

8.1. Lecture (syllabus)		Teaching methods	Notes
Bibliography			
8.2. Applications/Seminars		Teaching methods	Notes
1.	Representation of steel elements and constructions. Presenting the main provisions of the standards relating to: lines used in industrial drawing, scales, the conventional representation of materials, dimensioning. Representation of rolled sections and types of joints.	Graphical, interactive solution of applications, presentation of the theoretical basis – onsite	Videoprojector - onsite
2.	Representation and dimensioning of steel constructions. Bolted joint. Base of a steel column. Sections.		
3.	Representation and dimensioning of steel constructions. Welded joint. Joint detail metal girder. Sections.		

4.	DESIGN DRAWING. The conventional representation of joinery (windows, doors); the representation and dimensioning of different openings; the representation of stairways.		
5.	DESIGN DRAWING. Drawing of a residential building B+GF+1F. Building axes. Drawing the ground floor plan.		
6.	DESIGN DRAWING. Building B+GF+1F. Ground Floor Plan.		
7.	DESIGN DRAWING. Building B+GF+1F. Foundation Plan. Foundation Details.		
8.	DESIGN DRAWING. Building B+GF+1F. Basement Plan.		
9.	DESIGN DRAWING. Building B+GF+1F. 1 st Floor Plan.		
10.	DESIGN DRAWING. Building B+GF+1F. Terrace Plan. Parapet Wall Detail. Drainage Detail.		
11.	DESIGN DRAWING. Building B+GF+1F. Longitudinal section – foundation, basement, ground floor, staircase.		
12.	DESIGN DRAWING. Building B+GF+1F. Longitudinal section – 1 st floor, staircase, terrace.		
13.	DESIGN DRAWING. Building B+GF+1F. Cross section– foundations, basement, ground floor, staircase.		
14.	DESIGN DRAWING. Building B+GF+1F. Cross section – 1 st floor, staircase, terrace.		
Bibliography In the TUC-N library: <ol style="list-style-type: none"> 1. Delia Drăgan, Raluca Nerișanu, Adrian Tudoreanu: Civil Engineering Graphics-Grafică inginerescă pentru Construcții, bilingual edition, Publisher U.T.Press Cluj-Napoca, 2019, 2021, 2023 Editions. 2. Delia Drăgan, Raluca Nerișanu, Adrian Tudoreanu: Civil Engineering Graphics-Grafică inginerescă pentru Construcții, 2nd Edition, bilingual edition, Publisher U.T.Press Cluj-Napoca, 2017. 3. Delia Drăgan, Raluca Nerișanu: Civil Engineering Graphics-Grafică inginerescă pentru Construcții, bilingual edition, Publisher U.T.Press Cluj-Napoca, 2014. 4. Delia Drăgan, Radu Dardai, Dorin Bărbîntă, Claudia Alb, Raluca Nerișanu: Desen Tehnic și Infografică pentru Construcții, Civil Engineering Technical Drawing and Infographics, bilingual edition, Publisher U.T. Press Cluj-Napoca, 2011. 5. Vasile Iancău, Elena Zetea, ș.a. - Reprezentări geometrice și desen tehnic, București E.D.P., 1982. 6. *** Current Standards. 			

9. Bridging course contents with the expectations of the representatives of the community, professional associations and employers in the field

Acquired skills will be required for employees who will work in design offices and for those who will work in execution.

10. Evaluation

Activity type	10.1 Assessment criteria	10.2 Assessment methods	10.3 Weight in the final grade
Course	N/A	N/A	N/A
Applications	The drawings made during the semester are corrected and scored (L).	Attendance and participation in the classes. Presentation of the album of drawings (portfolio of drawings).	50%
	The final exam consists in solving some applications closely related with the topics tackled during the semester (C).	Final oral and written exam, with a duration of 2 hours (using AutoCad)	50%

NOTES: 1. The evaluation will be done onsite; 2. The teacher who is in charge with the workshop may decide that the written examinations / exams be followed by an oral presentation. Those who do not participate at the oral presentations lose their right to appeal.	
10.4 Minimum standard of performance	
(a) The eligibility conditions for taking part to the exam: *The grade for the workshops (written in the electronic classbook): L: min. 5 (five) ** It is required to make a portfolio of drawings and a sketchbook. The grade for the exam: C: min. 5 (five)	
The formula for obtaining the grade (N)	$N=0,5L+0,5C$; Condition for obtaining the credits: $N \geq 5$, if $L \geq 5$ and $C \geq 5$.

Date of filling in	Persons in charge of	Title Surname NAME	Signature
18.06.2025	Course	N/A	
	Applications	Assist. Prof. PhD. Eng. Raluca NERIȘANU	
		Assist. PhD. Eng. Gheorghe BĂRBOS	

Date of approval in the department 19.06.2025	Head of Department, Assoc. Prof. PhD. Eng. Mihai Liviu DRAGOMIR
Date of approval in the Faculty Council 25.06.2025	Dean, Prof. PhD. Eng. Daniela Lucia MANEA