

Course file

Study cycle	BACHELOR IN CIVIL ENGINEERING		
Course	DRAWING AND COMPUTER-AIDED DESIGN	Mandatory	<input checked="" type="checkbox"/>
		Optional	<input type="checkbox"/>
Course scientific area	CIVIL ENGINEERING	Category	P

Course category: B - Basic; C - Core Engineering; E - Specialization; P - Complementary.

Year: 1st	Semester: 2nd	ECTS: 4,0		Total: 108
Contact time	T:	TP: 45	PL:	S: OT:

T - Lectures; TP - Theory and practice; PL - Lab Work; S - Seminar; OT - Tutorial Guidance.

Course Director	Title	Position
Carlos Penim Loureiro	Doutor	Professor Adjunto

Learning objectives (knowledge, skills and competences to be developed by students)

(max. 1000 characters)

1. Practice in the graphical representation of project construction.
2. Skills in the execution of plans, sections, elevations and construction details.
3. Ability to use AutoCad drawing tool.

Syllabus

(max. 1000 characters)

1. Location Plans and Impact Assessment.
2. Residential Buildings Plans.
 - 2.1. Construction Elements; Door, Windows, Stairs, Toilet and Kitchen equipment.
3. Roof Project
 - 3.1. Definitions and representation
4. Elevations and Sections.
5. Construction Elements Dimensioning

6. Water and Sewer Infraestructures.

7. Computer-aided Design.

7.1. AutoCAD's Axial Sistem

7.2. Tools

7.3. Layers and Blocks

7.4. Plans drawing and Organization

Demonstration of the consistency between the syllabus and the course objectives

(max. 1000 characters)

Chapters 1, 2, 3, 4 and 5 of the program provide a set of information and methodologies that will enable the student, both during their training or research, as well as in professional life opt for different type of graphical representation of project engineering and design of necessary infrastructure architecture and urbanism.

In Chapter 6 of the program the student is given a complementary tool, now indispensable, applicable in the representation of any object. Through the field of projection systems are developed, not only skills in the use of this drawing program, but also in implementation and management of drawings of the construction project, such as plans, sections, elevations and construction details

Teaching methodology (evaluation included)

(max. 1000 characters)

Classes are Theoretical and Practical. Programmatic topics are present in the educational support elements, which contain a summary of theoretical material and exercises always solved. All the theoretical exposition of the methodology is framed by practical context, using volumes and exercises that relate to the construction universe and their communication needs, determination of data and formal dimensions and construction details.

Students develop a set of practical exercises or accompanying the lecturer demonstrations, or with the support of the timely resolution of issues and problems in class or outside, in tutoring.

DURING CLASSES AVALUATION: 3 Practical drawing work + CAD Assessment + 1 General final assessment

ASSESSMENT: 2 Final Exams (Hand-drawing Module + CAD drawing Module)

Demonstration of the consistency between teaching methodology and the course learning objectives

(max. 3000 characters)

This course objectives are achieved, mainly, by the practical approach printed by the teaching methodology: Students are encouraged to constructive graphical representation of areas which are usually subject to errors reading / interpretation during the analysis of the project or in construction site. This practice allows students to experience itself, the purest strains and general methods best suited to expose their data construction, and formal dimensions, in a rigorous and unequivocal way.

They are given skills in the interpretation, execution and management of drawings of the construction project, through direct experience of design producing (either by hand or in Autocad) and understanding how to make it clear and legible to others.

Main Bibliography

(max. 1000 characters)

- RGEU : Regulamento Geral das Edificações Urbanas
- CLEMENTE, José dos Santos: Estruturas de Madeira em Coberturas de Edifícios Correntes, texto do Curso de Promoção Profissional 516-Coberturas de Edifícios LNEC, Lisboa, 1976
- NEUFERT, Ernest: Arte de Projectar em Arquitectura, Ed. Gustavo Gili do Brazil AS,S. Paulo, 1974
- CUNHA, L. Veiga da: Desenho Técnico, Fundação Calouste Gulbenkian, Lisboa,1974