DEGREE CURRICULUM

TECHNICAL PROJECTS

Coordination: BURGUES SOLANES, JOSEP MARIA

Academic year 2023-24

TECHNICAL PROJECTS 2023-24

Subject's general information

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<tr><td>Subject name</td><td>TECHNICAL PROJECTS</td></tr>
<tr><td>Code</td><td>101427</td></tr>
<tr><td>Semester</td><td>2nd Q(SEMESTER) CONTINUED EVALUATION</td></tr>
<tr><td>Typology</td><td>
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<tr><th>Degree</th><th>Course</th><th>Character</th><th>Modality</th></tr>
<tr><td>Bachelor's Degree in Architectural Technology and Building Construction</td><td>4</td><td>COMPULSORY</td><td>Attendance-based</td></tr>
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<tr><td>Course number of credits (ECTS)</td><td>9</td></tr>
<tr><td>Type of activity, credits, and groups</td><td>
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<tr><th>Activity type</th><td>PRAULA</td><td>TEORIA</td></tr>
<tr><th>Number of credits</th><td>3.6</td><td>5.4</td></tr>
<tr><th>Number of groups</th><td>1</td><td>1</td></tr>
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<tr><td>Coordination</td><td>BURGUES SOLANES, JOSEP MARIA</td></tr>
<tr><td>Department</td><td>INDUSTRIAL AND BUILDING ENGINEERING</td></tr>
<tr><td>Teaching load distribution between lectures and independent student work</td><td>1 ECTS=10 h of face-to-face class + 15h of autonomous work</td></tr>
<tr><td>Important information on data processing</td><td>Consult this link for more information.</td></tr>
<tr><td>Language</td><td>Catalan</td></tr>
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TECHNICAL PROJECTS 2023-24

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
BURGUES SOLANES, JOSEP MARIA	josemaria.burgues@udl.cat	9	

Subject's extra information

This subjetc consists in the development of a change of use refurbishment project of a building, in-depth applied analysis of the Building Reguations and using sustainability criteria. The different knowledge adquired during the degree must be applied here to a practical case study.

This subject requires of a continuous work during the whole semestre to acomplish the required objectives.

Learning objectives

- To write the documents of a building project correctly, both in terms of grammar and orthography.
- To use an appropriate technical language, both in written documents and in oral presentations.
- To present orally ideas and solutions in a structured and clear way.
- To correctly manage both the personal and team time to develop the established tasks and fulfil the objectives within the given period of time.
- To use correctly the computer tools to development of project and public presentations.
- To determine unknown values and to make realistic assumption of the constructive system based in the available information.
- To apply technical knowledge of construction, refurbishment and sustainability, accordingly to the project.

Competences

Strategic competences of UdL:

- **UdL1.** Appropriate skills in oral and written language.
- **UdL3.** Mastering ICT's.
- **UdL5.** Apply the gender perspective to the functions of the professional field.

Cross-disciplinary competences of the degree:

- **EPS1.** Capacity to solve problems and prepare and defence arguments inside the area of studies.
- **EPS2.** Capacity to gather and interpret relevant data, within the area of study, to judge and think about relevant subjects of social, scientific and ethical nature.
- **EPS6.** Capacity of analysis and synthesis.
- **EPS7.** Capacity to work in situations with a lack of information and/or under pressure.
- **EPS8.** Capacity of planning and organizing the personal work.
- **EPS9.** Capacity for unidisciplinary and multidisciplinary teamwork.
- **EPS11.** Capacity to understand the needs of the user expressed in a no technical language.
- **EPS13.** Capacity to consider the socioeconomic context as well as the sustainability criteria in engineering solutions.

Specific competences of the degree:

- **GEE35.** Capacity to apply advanced tools needed to compose the different parts of a technical project and its management.
- **GEE36.** Skills to write technical projects of building sites and constructions that do not require architectural projects such us projects of demolition and decoration.

- **GEE37.** Skills to write documents that are part of the executive project created in a multidisciplinary way.
- **GEE38.** Capacity to analysis executive projects and its use in the execution of works.
- **GEE39.** Knowledge of the roles and responsibilities of the agents that take part in the building process and his professional or business organisation. The administrative procedures, of management and processing.
- **GEE40.** Knowledge of the professional organization and the basic procedures in the field of building and promotion.

Subject contents

1. Project Morphology

1.1 The office

1.2 The project

1.3 Competences of the Building Engineer

1.4 Project morphology

1.5 Professional office works

1.6 Project regulations

2. Building and Uses

2.1 Museum

2.2 Spa and gymn

2.3 Fire Station

3. Refurbishment

3.1 General concepts

3.2 Applicable regulation and heritage

4. Sustainability

4.1 General concepts

4.2 Sustainable Construction Criteria

4.3 Energy savings and efficiency. CTE-HE Energy savings

4.4 Sustainable materials and optimization

4.5 Waste treatment and circular economy

4.6 Water consumption and saving

4.7 Health constrains

5. Application of the CTE

5.1 Regulatory framework

5.2 SE Structural Safety

5.3 SI Fire safety

5.4 SUA Security of use and accessibility

5.5 HR Noise protection

5.6 HS Sanitation

Methodology

The subject is developed using the following methodologies:

- **Master class:** In master classes the contents are presented orally by the lecturer with no active participation of the students.
- **Project development:** Active learning methodology that fosters the learning based on the development of a project: idea, design, planning, development and evaluation of the project.

Development plan

Week	Methodology	Content	Work presentations	Face-to-face/Autonomous work hours
1	Master class	Subject presentation Groups organization Project morphology		6/9
2	Master class Project development	Project morphology Workshop		6/9
3	Master class Project development	Project morphology Building and uses Workshop		6/9
4	Master class Project development	Building and uses CTE Workshop		6/9
5	Oral presentation Master class Project development	CTE Workshop	Presentation 1	6/9
6	Master class Project development	CTE Workshop		6/9
7	Master class Project development	CTE Workshop		3/4.5
8	Master class Project development	CTE Workshop		6/9
9	Autonomous work			0/9

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Week	Oral presentation Methodology Master class	CTE Content Sustainability	Presentation Work presentations	Face-to-face/Autonomous work hours
1	Project development Master class	Subject presentation Groups organization		6/9 3/4.5
2	Master class Project development	Project morphology Refurbishing		6/9
3	Master class Project development	Project morphology Building and uses		6/9
4	Master class Project development	Building and uses Sustainability		6/9
5	Oral presentation Master class	CTE Workshop	Presentation 1	6/9
6	Master class Project development	CTE Workshop	Delivery of the final document	6/9 0/9
7	Master class Project development	CTE Workshop		3/4.5
8	Master class Project development	CTE Workshop		6/9
9	Autonomous work			0/9
10	Oral presentation Master class	CTE Sustainability	Presentation 2	6/9
11	Master class Project development	Sustainability Workshop		3/4.5
12	Master class Project development	Sustainability Refurbishing Workshop		6/9
13	Master class Project development	Sustainability Refurbishing Workshop		6/9

Evaluation

Evaluation activity (criteria)	%	Dates
1ª Project Submission (Adaptation and Implications) Presentation + Document	10	Week 17
2ª Project Submission (Design proposals) Presentation + Document	20	Week 6
3ª Project Submission (Executive project) Presentation + Document	30	Week 10
4ª Final Delivery Document	40	Week 15 Week 17

Project mark

- The score of the project consists of 4 submissions, each of the first 3 consisting of a public presentation and a document submission, an the final delivery of a full project document.
- To evaluate each submission, every student must present both parts (presentation and document). In case

a student does not present one of both parts, this student will not get any score for the whole submission.
- In the 3rd submission of the project, the oral presentation will be the last day of class, while the document submission can be done until the day of the exam.

Bibliography

Recommended bibliography

- Preciado Barrera, Cándido. (1994). Oficina técnica: teoría y tecnología del proyecto. Cáceres: Universidad de Extremadura.
- Gómez Pompa, Pedro & Gómez Pérez, Mónica. (1994). Oficina técnica: proyectos, dirección y control de obras. Cáceres: Servicio de Publicaciones de la Universidad de Extremadura.
- Trueba Jainaga, J.Ignacio, Levenfeld González, Gustavo & Marco Gutierrez, J.Luis. (1991). Teoría de proyectos: morfología del proyecto. Madrid 6ª Edición.
- Sevilla López, J.Manuel. (2000). Manual para la redacción de proyectos de construcción en la administración pública. Madrid: CIE Inversiones Editoriales DOSSAT 2000, cop. 2000.
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- UNE 157001:2002. Criterios generales para la elaboración de proyectos.
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- Neila González, F.Javier. Arquitectura bioclimática: un entorno sostenible.
- Berge, Bjørn. The Ecology of Building Materials, 2000. ISBN: 978-0-7506-5450-0.
- Cuchí, Albert. Arquitectura i sostenibilitat, 2005. ISBN: 84-8301-839-X.