



Universitat de Lleida

DEGREE CURRICULUM **TECHNICAL PROJECTS**

Coordination: GRAU LANAU, RAMON

Academic year 2018-19

Subject's general information

| | | | | |
|---|---|---------------|------------------|------------------|
| Subject name | TECHNICAL PROJECTS | | | |
| Code | 102119 | | | |
| Semester | 1st Q(SEMESTER) CONTINUED EVALUATION | | | |
| Typology | Degree | Course | Character | Modality |
| | Bachelor's Degree in Automation and Industrial Electronic Engineering | 4 | COMPULSORY | Attendance-based |
| Course number of credits (ECTS) | 6 | | | |
| Type of activity, credits, and groups | Activity type | PRAULA | | TEORIA |
| | Number of credits | 3 | | 3 |
| | Number of groups | 2 | | 1 |
| Coordination | GRAU LANAU, RAMON | | | |
| Department | COMPUTER SCIENCE AND INDUSTRIAL ENGINEERING | | | |
| Teaching load distribution between lectures and independent student work | (40%) 60 h Attended (60%) 90 h Individual Work | | | |
| Important information on data processing | Consult this link for more information. | | | |
| Language | Català | | | |
| Distribution of credits | The class will be taught theoretical credits in large group GEM + GEEIA | | | |
| | The credits will be given to practical GM, Tuesday GEEIA i Friday GEM | | | |
| Office and hour of attention | by agreement | | | |

| Teaching staff | E-mail addresses | Credits taught by teacher | Office and hour of attention |
|-------------------|--------------------|---------------------------|------------------------------|
| GRAU LANAU, RAMON | rgrau@diei.udl.cat | 9 | |

Subject's extra information

The subject Technical Office, provides an approach to the profession of financial engineering by applying the knowledge acquired in other disciplines that are taught during the previous years of the race. This means that there is an approach to the reality of the exercise of the profession. The aim, ultimately, the student is able to apply multidisciplinary knowledge acquired during previous courses in engineering degree.

This course requires the student an **active and receptive** (not forgetting the analytical and critical of anyone who applies technical and must make decisions). **Students should bring creativity and initiative**

Learning objectives

In the course of TECHNICAL OFFICE expected to give a general idea of drafting, development, project management and technical work from a theoretical and practical point of view, approaching them to the labor market and reality.

This course provides the student understand the concept of Technical Office (cabinet where they develop technical work) and relate it to Engineering Projects.

The complexity of projects and technical and objectives that they are expected to achieve increasing daily, which has created new ways of working, innovations in the methods of management, planning and administration.

Organization where the aim is not only projected in a technical sense but must be able to combine the available resources in order to achieve better performance.

Competences

Degree Specific Skills:

The student understands the reality of the profession of engineer, powers and responsibilities in the development of the profession.

The student understands the definition, structure and functioning of the Technical Offices.

Initiate the student organization, planning, implementation and project management.

To know the different types of technical work that the engineer can perform and methodology for developing them.

To know the different criteria for the preparation of technical documents.

To know the legislative and regulatory framework affecting the development of the profession, especially its own specialty mechanics. Systems for administrative processing of projects and / or technical documents.

Having notions about the tasks of project management aspects of planning and management.

Key skills Degree:

And raised the need to equip the student capacity for teamwork, comprising equipment, enhancing

multidisciplineraitat.

Motivate students to achieve a minimum level of autonomy at work and giving it capacity to apply knowledge with respect to society and the environment. Ensure that the student is able to enjoy learning and raise it to the chosen profession requires training throughout professional life.

To stimulate the student's ability to solve technological problems and defend the solutions adopted.

Capacity analysis and synthesis decisions and applications of science and technology.

Subject contents

Unit 1

Presentation of the course (programming, evaluation) and legal framework of the program. Brief history of engineering.

Unit 2

Legislation and general technical regulations. Safety regulations. Application design and execution of the project. Processing of projects and technical documentation.

2.1 INTRODUCTION

2.2 STANDARDS

2.2.1.- Basic criteria for standardization.

2.2.2.- What is a standard?

2.2.3.- Drawing and technical standardization.

2.2.4.- classification standards.

2.3 DOCUMENTS TO OBTAIN LICENSES AND PERMITS.

2.3.1.- features applicable law.

2.3.2.- Procedures industrial installations.

2.3.3.- licenses granted by local councils

2.3.3.1- Licensing of building works.

2.3.3.2.-licensed major works

2.3.3.3.-licensed works under ordinary

2.3.3.4.-licensed works under simplified

2.3.3.5.-licensed activities.

2.4 Legality project

2.5 BASICS OF PLANNING.

2.5.1.- introduction.

2.5.2.- Sort territory

2.5.3.-planning exercise powers

2.5.4.-Meal planning and land classification

2.6.-INDUSTRIAL LOCATION

ANNEX 1

REGULATORY MILESTONES.

Unit 3

The technical office projects. Documents of the professional activity of the Engineering brief description of them.

3.1 Technical Office. Definition.

3.2.-Kind Technical Offices.

3.2.1.-According to their position in the organization chart of the company.

3.2. 2-In function.

3.2. 3- According to their specialty.

3.2. 4- According dependency.

3.2. 5- According size.

The company 3.3.-engineering.

3.4.- Freelance profession.

3.5.-office work that can perform a technical / engineering.

3.5.1- Technical reports and similar work.

3.5.1.1.- Format technical reports.

3.5.2- assessments, appraisals and budgets.

3.5.3- previous studies or viability.

3.5.4- drafts and projects.

3.5.5- Application and selection of deals

3.5.6- Monitoring implementation and commissioning.

3.6 APPROACH TO PROJECT

Unit 4

Introduction to the project. Concepts. Regulations apply to the drafting.

4.1 Definition of engineering project.

4.2 CONDITIONS THAT MUST COMPLY PROJECT.

4.3.- Feature engineering projects.

4.4.- FACTORS DETERMINING THE PROJECT.

4.5.- CLASSIFICATION engineering projects.

4.5.1.-Classification according to the purpose of the project.

4.5.2.-classification according to the objectives and fields of application.

4.5.3.- Main types of industrial projects.

4.5.3.1.-Major investment projects:

4.5.3.2.-facilities and industrial plants):

4.5.3.3.-lines and production processes.

4.5.3.4.- machines, equipment and their elements. Prototypes.

4.5.3.5.- For the purpose of the project.

For 4.5.3.6.- investment volume.

As 4.5.3.7.-process it uses.

4.6- agents around the project.

4.7.- DESCRIPTION OF THE STAGES AND PHASES OF A PROJECT. CLASSICAL THEORY.

4.7.1.-Approach

4.7.3.- Quantification

4.7.4.- Testing

4.7.5.- The basic project

4.7.6.-calculation and adjustment

4.7.7.- Documents Project

4.7.8.-Legalization

4.7.9.- Implementation and control

Unit 5

Organization and project documentation.

5.1 The project as a system. General Theory Project.

5.1.2.- previous studies.

5.1.3.- basic engineering.

5.1.3.1.-review of previous studies.

5.1.3.2.-definition project.

5.1.3.3.-data base:

5.1.3.4.-Permits and authorizations.

5.1.3.5.-engineering process.

5.1.3.6.-transfer technology.

5.1.4.-Activities of Basic Engineering Project.

5.1.4.1.-media production.

5.1.4.2.-General Information.

5.1.4.3.- Information affecting infrastructure specialists.

5.1.4.4.- information affecting specialize in construction.

5.1.4.5.- information affecting specialists in structures and foundations.

5.1.4.6.- information that affects the mechanical specialists. General and auxiliary facilities.

5.1.4.7.-information specialists electricity.

5.1.4.8.-information specialists pipes.

5.1.4.9.- Information specialists instrumentation.

5.1.5.-engineering project development.

5.1.5.1.- Detailed engineering.

5.1.5.2.- Purchasing Management.

5.1.5.3.- management contract.

5.1.5.4.- Construction and Assembly.

5.1.5.5.- Supervision of Construction and Assembly.

Unit 6

Basic engineering of the project. Analysis of key documents.

6.1 The project documents. Generalities.

6.2 Description of each of the documents.

6.2.1.- Plans

6.2.2.- Annexes Project

6.2.3.- Specification.

6.2.4.- state measurements

6.2.5.- budget.

6.2.6.- memory.

6.2.7.- studies in its own

Unit 7

Execution of projects and works. The supervision. Regulatory aspects. Legal responsibilities.

7.1 Implementation Project

7.1.1.-execution of the project (construction).

7.1.2.-parties.

7.2 Different alternatives for the project

7.2.1.-traditional alternatives:

7.3.- Beginning of Technical Management

7.3.1.- Objective

7.3.2.- Home.

7.3.3.- Fi

7.3.4.- duration.

7.3.5.-planning startup.

7.3.5.1.- Definition.

7.3.5.2.- Programming.

7.3.6.- Organization on.

7.3.6.1.- Definition and objectives.

7.3.6.2.- Plan supervision and monitoring.

7.3.6.2.- monitoring plan deadlines

7.3.7.- Health and Safety Plan

7.3.8.- Cost Control Plan

7.3.8.1.- Objectives:

7.3.9-execution.

7.3.9.1.- Act of reconsideration.

7.3.9.2.- tasks.

7.3.10.- Certifications

Modifications 7.3.11.- contract.

7.3.12.- Suspensions and extensions.

7.3.13.- Front and provisional delivery to the user.

7.3.14.- provisional liquidation.

Front 7.3.15.- final and final settlement.

7.4.- Extract from the Technical Building Code (CTE)

Methodology

The subject has a **conceptual** component and another **practice**.

Part conceptual:

It includes everything that refers to general concepts related to the subject. This part is assessed individually for each student.

Practical part:

For the practical development of the course, students will be organized into teams of max 4/6 students realize the project and practice (these, some can be individual, according to the teacher's discretion). The criteria to form the

team include: Affinity between students ability to share common timetables, others.

Practices are conducted in accordance with the criteria established in class and will deliver or present on the dates set by the teacher. At the end of the semester, each team will present the project to the teacher with their documents and outline orally in class in front of other students in the class.

During the preparation and drafting of Professor tracked through mentoring techniques. These tutorials will only be in the schedule to this effect has meant that the teacher or during school hours indicated. The team will present pace of work carried out, which will be reflected in the folder and individual student in the team.

The teacher-tutor team will provide their views on issues such as:

Establish judgment on the progress of work.

What is the scope of the project.

Motivating students facing difficulties that may occur

As presented in the most effective their work in public.

Each team shall appoint a director - project coordinator. The team will meet according to their own needs. This meeting will be an act consisting in at least the date, participants, points proposed solutions to each point into a calendar and tasks for each component of the team. This certificate will be delivered in electronic format before the teacher tutorials technique.

The theme of each proposed project team and / or the teacher, trying to make it as real as possible.

The project will be delivered on standard paper and computer support (utilitza't for the students to drafting the document). The paper will become the team the day of the exhibition of the work, the computer support will hold a teacher.

Development plan

Drop sequentially content

Evaluation

The grade of each part (theory and practice) will by the weighted average of the parts that count examination of the practical parts of attendance. To take part each half a grade equal to or greater than four.

It provides a continuous assessment of the student.

The team practices are mandatory.

The mark for the course will be assessed as follows:

The concepts (examination), represent 40%.

Practical work (15%)

The work "project" to be presented at the end of the semester 35%.

Class attendance 10%

Theoretical. Release regarding the partial test.

In the middle of the semester there will be a partial test (P1), which corresponds to the subject during the first part of the semester.

At the end of the semester there will be a partial test (P2), which corresponds to the subject during the second half

of the semester. Students who have suspended the examination conducted P1 PT that correspond to all the matter of the semester. The student can only examine part of the P2 or PT.

Both sides have the same value. The practice team and individual project are compulsory for all students.

Second call (extraordinary):

The matter will be evaluated in this announcement that relates to the entire course (including internships).

Observations:

The exam consists of a test and / or theoretical questions that correspond to 50% of the theory exam.

The other theory part will consist of exercises with notes, bibliography or guides, this part will represent 50% of the theory exam.

In all the parts have to remove at least 3.5 for average.

Practical

This part will consist of:

- Carrying out technical work "project" proposal the teacher and / or each class equipment.

Both the presentation of such practices and the subsequent evaluation of them is a prerequisite to pass the course.

Each team member will issue the final course in an objective assessment% of the remaining team mates individually relating to compliance parameters agreed by the team, participation in team work, motivation in tasks in the project approach in meetings, etc. This assessment will be communicated by email to the teacher individually (extrapolated the outliers compared to most of the equipment).

The assessment of this part is as follows:

| SECTIONS | VALUATION% |
|-------------------------------------|------------|
| TECHNICAL SUPERVISION | 10 |
| WORK / PROJECT | 70 |
| PRESENTATION AND EXHIBITION PROJECT | 20 |

Bibliography

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- David Burstein i altre. Project Management.(ISBN: 84-252-1701-6). Ed. Gustavo Gili.
- Faustino Merchan Gabaldon. Manual para la dirección integrada de proyectos de obras. (ISBN: 84-95312-01-8).Ed. Dossat 2000.
- James P.Lewis. Fundamentos de la dirección de proyectos.Ediciones S.
- Legislation applicable to buildings and industrial facilities.
Different regulations affecting the work carried out.
Different websites of government.