

Información del Plan Docente

Academic Year	2017/18
Faculty / School	175 - Escuela Universitaria Politécnica de La Almunia
Degree	422 - Bachelor's Degree in Building Engineering
ECTS	6.0
Year	3
Semester	Second semester
Subject Type	Compulsory
Module	---

1.General information**1.1.Introduction****1.2.Recommendations to take this course****1.3.Context and importance of this course in the degree****1.4.Activities and key dates****2.Learning goals****2.1.Learning goals****2.2.Importance of learning goals****3.Aims of the course and competences****3.1.Aims of the course****3.2.Competences****4.Assessment (1st and 2nd call)****4.1.Assessment tasks (description of tasks, marking system and assessment criteria)****5.Methodology, learning tasks, syllabus and resources****5.1.Methodological overview**

The learning process that is designed for this subject is based on the following: The teaching methodology of the subject Organization, Planning and Control Works is based on a teacher / student interaction. In particular teaching methodology of this subject is based on a series of activities organized and directed from the teacher to the student-to-face basis, in which the basics are taught that the student-to consolidate by conducting tutored also attending classes. In addition to the practical sessions will be proposed autonomous activities for students to address its resolution of undirected manner, the resolution will take place in the following practice sessions or during individual tutorials or group. As explained, the teaching methodology provides for the development of the following activities: **Classroom**

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activities:

a. Lectures on theoretical arguments: the theoretical concepts of the subject will be explained. b. Problems and exercises classes: practical examples and problems in class on the theoretical aspects will be developed, but with a reference marking based on real cases and works. c. Tutored practices: examples students will develop and conduct problems and / or concerning the theoretical concepts studied both in lectures and practical case studies. d. Educational visits: to the extent that there is this possibility, visits will be made to work, companies in the construction industry, etc. in which to check the issues addressed in the subject, serving as a reference for carrying out practical work.

Tutored autonomous activities: These activities are carried out independently by students under the supervision of teachers of the subject.

Reinforcement activities: Through the virtual portal teaching (Moodle) or email at the University of Zaragoza, teachers of the subject will develop, for specific cases which can not apply conventional tutoring, support activities and help students who needed it, resolving doubts or providing solutions to inherent problems arguments agenda.

5.2.Learning tasks

The program that the student is offered to help you achieve the expected results includes the following activities

... It involves the active participation of students, so that to achieve the learning outcomes will be developed, non redundant to the above, the following activities: **Lectures** : lectures on theoretical arguments or troubleshooting taught primarily in a exhibition by the teacher.

Seminars / workshops: Activities of theoretical discussion and / or markedly practice, conducted in the classroom or in other forums by visiting lecturers or speakers generally not box belonging to teachers of the subject.

Visits: Educational visits guided by teachers of the subject related to the topics covered throughout the course.

Individual tutorials: or virtual through the virtual learning portal (Moodle) or email at the University of Zaragoza.

Group tutorials: focused on learning by students developed by the teacher who meets with a group of students to answer questions or develop group examinations resolutions or issues of common interest. The subject consists of 6 ECTS credits, which represents 150 hours of student work on the subject during the semester. 40% of this work (60 h.) Will take place in the classroom, and the rest will be autonomous.

One semester consist of 15 teaching weeks. To make the timing is used to measure the school week, in which the student must devote to the study of the subject 10 hours.

5.3.Syllabus

1. IMPLEMENTATION PLAN WORK. This topic is basically about how to undertake the organization of the work: necessary infrastructure, temporary site installations, rush, permits, resources, etc.
2. INTRODUCTION TO THE PROGRAMMING AND PROJECT PLANNING. The subject introduces students to the need to plan and track projects to ensure compliance with its requirements: cost, time, quality, safety.
3. COMPONENTS OF A PROGRAM. It shows the need to break down a project into different interrelated activities and which are assigned a priority.
4. NETWORKS PERT-CPM. GANTT DIAGRAM. PERT-CPM networks are forms of graphic representation in mesh development of a project related activities broken down into: network elements, to elaborate rules, calculation times, durations, critical path, looseness, PERT networks consider time as a random variable, while the CPM networks consider time as a datum. Gantt chart is the representation of a project in a bar graph representing activities, describing sequences of all the activities that make up the project.
5. PROBABILITY DISTRIBUTION AND METHOD MCE. The uncertainty in the timing of implementation of activities leads us to consider the concept of probability of compliance with a schedule. Therefore, the duration is a random variable once obtained becomes a datum. But there is a relationship between duration and resources applied (cost). The MCE method tries to find an optimal solution cost-lasting.
6. METHOD ROY. This topic other form of graphical representation of programming with some variations from the PERT-CPM representation is addressed. There activities are represented by arrows whose beginning and end is marked by an event. Now, activities are represented by rectangles that are linked by arrows indicating the relationships between activities. Relations activities are to start final.
7. METHOD OF PRECEDENCE. Network programming procedure by which calculation process follows the critical path method, with systems like ROY PERT and programming logic. Network design is similar to ROY system, showing the activities themselves with a beginning and an end, and their predecessors and successors with the difference that allows you to schedule activities in parallel moving closer to the reality of implementation.
8. CONTROL OF WORKS. It will give a general overview of the highlights for effective control methods works, and if so how to approach the application of corrections / modifications in case of deviations detected on the initial

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planning.

5.4.Course planning and calendar

Schedule sessions and presentation of works

week		activities
1		TOPIC 0 TOPIC 1
2		ITEM 1 TOPIC 1
3		TOPIC 1 TOPIC 2
4		TOPIC 2 ITEM 3
5		UNIT 4 TOPIC 4
6		TOPIC 4 TOPIC 4
7	SEMINAR	SEMINAR Gantter (ANA Dr. ESTEBAN.) / PRACTICE 4: GANTT realization
	TOPIC 4	PRACTICE 4: GANTT presentation in class
8		ALL TOPICS rehearsals ASSESSMENT TEST theoretical and practical (Continuous assessment)
9	UNIT 5	PROBABILITY DISTRIBUTION METHOD MCE
10	UNIT 5 UNIT 5	DISTRIBUTION probab. AND METHOD MCE
	UNIT 5	PRACTICAL 6: METHOD MCE / ODDS
11	ITEM 6 ITEM 6	METHOD ROY Practices WORK METHOD ROY PERT
12	ITEM 6 SEMINAR	PRACTICE 7: ROY BIM (Building Information Modeling)
13	ITEM 7	METHOD OF PRECEDENCE / Resolution Practice 6
	ITEM 7	PRACTICE 7: PRECEDENCE
14	ITEM 6	PRACTICE 7: PRECEDENCE. EXPOSURE AND DEFENCE
15	ITEM 8 UNIT 8	CONTROL WORKS PRACTICE 8: CONTROL OF WORKS
	TEST	theoretical and practical (Continuous assessment)

The dates of the two final exams will be published officially in

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<http://www.eupla.unizar.es/index.php/secretaria-2/informacion-academica/distribucion-de-examenes> The dates of the partial tests will be substantially coincident with the attached planning, and in any case be communicated to the start of classes.

5.5. Bibliography and recommended resources

- Horine, Gregory M.. Manual imprescindible de gestión de proyectos / Gregory M. Horine. - Ed. rev. y act. Madrid : Anaya Multimedia, D.L. 2010.
- González Fernández, Francisco Javier. Manual para una eficiente dirección de proyectos y obras / Francisco Javier González Fernández. - 1ª edición Madrid : Fundación Confemetal, 2002
- Zaragoza Martínez, Fco. Javier. Planes de obra / Fco. Javier Zaragoza Martínez. - 4ª ed San Vicente (Alicante) : Club Universitario, DL 2008
- Goldratt, Eliyahu M. Cadena crítica / Eliyahu M. Goldratt . - 1ª edición Buenos Aires : Granica, 2007