28830 - Technical Office

Información del Plan Docente

Academic Year	2016/17
Academic center	175 - Escuela Universitaria Politécnica de La Almunia
Degree	424 - Bachelor's Degree in Mechatronic Engineering
ECTS	6.0
Course	4
Period	First semester
Subject Type	Compulsory
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The learning process that is designed for this subject is based on the following:

A strong interaction teacher/student. This interaction becomes a reality by a division of labor and responsibilities between students and teachers. However, to some extent, the students will be allowed to set up their own pace of learning according to their needs and availability, following the guidelines set by the teacher.

The teaching organization is based on the number of ECTS credits, which represents, in this case 150 hours of student

work on the subject during the semester (15 weeks tuition). 60 hours will be held in the classroom and LAB and the rest will be autonomous work.

The organization of the actual teaching will be based on the following guidelines:

- **Theory Classes** : theoretical activities conducted by the teacher, so that the theoretical support of the subject is given, highlighting the major issues, structuring them on chapters and / or sections and connecting them to each other.
- **Classroom practice work** : Theoretical discussion activities or practice work preferably performed in the classroom and requiring high student participation and a performance directed by the teacher.
- **Lab Practice work:** The total group of master classes will be divided into several groups according to the number of students enrolled, but never more than 24 students, so that smaller groups are formed. Computer Application Practical Activities for the production of Project Documents with the relevant software will be made in the Technical Office classroom.
- **Group tutorials:** Scheduled tracking learning activities in which the teacher meets with a group of students to guide their autonomous learning work and consultancy of targeted work or tasks that require a very high degree of advice from the teacher. Essentially a number of hours will be required for such group monitoring (to agree with each of the groups, with at least the specified time in the **Calendar** section of this document).
- **Individual tutorials:** These are made on a one-to-one basis, at the department. They aim to help solving problems that are the students might have, particularly those which for several reasons cannot attend group tutorials or need a more personalized attention. These tutorials may be face-to-face or virtual (Moodle or email).

5.2.Learning activities

The program that the students are offered to help them achieve the expected results involves the following activities...

Active participation of the students, so that, to achieve the learning outcomes, no redundancy intended with the above mentioned, the following activities will be developed:

- Face-to-face Generic Activities:

- **Theoretical classes:** the concepts and procedures of the subject will be developed and practical examples as support will be developed
- **Practical classes:** problems and case studies will be done to complement the theoretical concepts studied
- **Lab practice work:** Students will be divided into several groups not bigger than 20 students / being monitored by the teacher.

- Non-class Generic Activities:

- Study and assimilation of the concepts and procedures outlined in the laboratory.
- Understanding and assimilation of the problems and practical cases solved in practical lessons.
- Organization of seminars, suggested problems solving, etc.
- Organization of laboratory practice work, development of scripts and reports.
- Individual and group production of the final Project.

- Monitored autonomous activities: Although they will rather have a mixed nature between face-to-face and non-class tuition they have been considered separately and will be focused mainly to seminars and tutorials under the supervision of the teacher.

- Reinforcement activities: With a remarkable non-class nature, through a virtual learning portal (Moodle, e-mail) several activities that reinforce the basic contents of the subject will be carried out. These activities can be customized or not, and will be monitored through the portal.

28830 - Technical Office

The subject consists of 6 ECTS credits, which represents 150 hours of the student work during the semester, i.e. 10 hours per week for 15 tuition weeks.

5.3.Program

Essential Contents of the subject for the achievement of learning outcomes

As discussed above, the subject to be developed along the course is dividedin **2 well-differentiated parts:**

1.- Theory Contents

Part 1: Theory on Methodology, Planning and Project Standards	
Unit 0	**PROGRAM AND PRESENTATION OF THE COURSE** 0.1 Introduction to the Subject and general presentation of the theoretical and practical contents 0.2 Scheduling of classroom lessons, blended learning and autonomous classes 0.3 Group and individual tutorials timetable 0.4 Assessment Criteria and Ratings. CEVA table 0.5 Introduction and purpose of the Software and Hardware to use 0.6 Delivery of cards for the call for papers. Work group Distribution
Unit 1	TECHNICAL OFFICE 1.1 Technical role in the company 1.2 T.O. Functions: Demand forecast and upon request 1.3 T.O Organization

28830 - Technical Office

	1.4 T.O. Relation with Departments. 1.5 T.O. Role in the client-company relation
Unit 2	THE PROJECT 2.1 The project: Concepts and Classification 2.2 Project Factors 2.3 Project Stages 2.4 Methodology
Unit 3	PROJECT DOCUMENTS 3.1 UNE Standards 3.2 Project Documents: Memory, Plans, P.C., Budget Annexes, and Planning
Unit 4	DRAWING IN THE PROJECTS 4.1 General Plans 4.2 Systems and Subsystems 4.3 Group Drawings (UF). Lists 4.4 Subgroup Drawings. Lists 4.5 Workshop Drawings. Lists 4.6 Welded Parts. Lists 4.7 Information and Basic Engineering

Unit 5	PROJECT MANAGEMENT 5.1 General Issues 5.2 Tasks and Dependencies. Reports 5.3 Resources and Workloads. Reports 5.4 Monitoring and Control. Reports
Unit 6	QUALITY AND LEGAL ISSUES 6.1 Regulations for Industrial Engineering Projects 1 and 2

2. Theoretical and Practical Contents

Part 2: Theory-Practice Knowledge and Application of Computer Tools for the Design Drawings	
Unit 7	**APPLICATIONS IN THE DEVELOPMENT OF CAD / CAE (I): Plant Design**
Unit 8	**APPLICATIONS IN THE DEVELOPMENT OF CAD / CAE (II): Solid Modeling**
Unit 9	**APPLICATIONS IN THE DEVELOPMENT OF CAD / CAE (III): Schemes**

5.4.Planning and scheduling

Classroom session schedule and presentation of works

For the presentation of papers the students will be informed either during the development of the classroom activities or through the Moodle platform: http://moodle.unizar.es.

In the following table, the schedule which includes the development of the activities and work is shown and may vary depending on the teaching progress:

28830 - Technical Office

5.5.Bibliography and recomended resources

- Vidondo, Tomás.. Tecnología mecánica 3 / Tomás Vidondo, Claudino Alvárez.. 1ªedición Barcelona : Edebé, 1995.
- Mata, Julián. Dibujo Mecánica 4 / Julián Mata, Claudino Alvarez, Tomás Vidondo. - 1ª edición Barcelona : Edebé, 1987
- Mata, Julián. Dibujo Mecánica 2 / Julián Mata, Claudino Alvarez, Tomás Vidondo. - Reimpresión Barcelona : Edebé, 1986
- Rodríguez de Abajo, F.Javier. Dibujo técnico / F.Javier Rodríguez de Abajo, Víctor Alvarez Bengoa San Sebastián : Editorial Donostiarra, D.L.1990
- Diseño e ingeniería con Autodesk Inventor / Javier Suárez Quirós ... [et al.] ; con la colaboración de Alfonso Iglesias Sánchez Madrid : Pearson Educación, D. L. 2006
- Cos Castillo, Manuel de. Teoría general del proyecto. vol.I, Dirección de proyectos = Project Engineering / Manuel de Cos Castillo . - 1ª ed., 4ª reimp. Madrid : Síntesis, 2007
- Cos Castillo, Manuel de. Teoría general del proyecto. vol.II, Ingeniería de proyectos / Manuel de Cos Castillo . - [1a. ed.] Madrid : Síntesis, D.L.1997
- Brusola Simón, Fernando. Oficina técnica y proyectos / Fernando Brusola Simón. - 1edc Valencia : Universidad Politécnica de Valencia, D.L. 1999,2011
- Chatfield, Carl.. Project 2007 : paso a paso / Carl Chatfield, Timothy Johnson.. - 1 edc Madrid : Anaya Multimedia, [2007]
- Rodriguez de Abajo, F.Javier. Normalización del dibujo industrial / F.Javier Rodriguez de Abajo, Roberto Galarraga Astibia San Sebastián : Editorial Donostiarra, D.L. 1993
- Auría Apilluelo, José M.. Dibujo Industrial : conjuntos y despieces / José M. Auria Apilluelo, Pedro Ibáñez Carabantes, Pedro Ubieto Artur . - 2ª ed., 2ª reimp. Madrid : Thomson, 2008
- Rodríguez Mata, Antonio. Desarrollo de sistemas secuenciales / Antonio Rodríguez Mata, Julián Cócera Rueda [Madrid] : Paraninfo : Thomson learning, D.L. 2000
- Serrano Nicolás, Antonio. Neumática práctica / Antonio Serrano Nicolás Madrid : Paraninfo, 2009
- Piedrafita Moreno, Ramón. Ingeniería de la automatización industrial / Ramón Piedrafita Moreno . - 2a ed. amp. y act. Madrid : Ra-Ma, D.L. 2003 [cop. 2004]
- Tobes Monzón, Julio. Apuntes Asignatura Oficina Técnica. - 1 edc La Almunia: EUPLA, 2012