

## 25879 - Ergonomics

### Syllabus Information

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**Academic Year:** 2020/21

**Subject:** 25879 - Ergonomics

**Faculty / School:** 110 - Escuela de Ingeniería y Arquitectura

**Degree:** 558 - Bachelor's Degree in Industrial Design and Product Development Engineering

**ECTS:** 6.0

**Year:** 3

**Semester:** First semester

**Subject Type:** Compulsory

**Module:** ---

## 1.General information

### 1.1.Aims of the course

### 1.2.Context and importance of this course in the degree

### 1.3.Recommendations to take this course

## 2.Learning goals

### 2.1.Competences

### 2.2.Learning goals

### 2.3.Importance of learning goals

## 3.Assessment (1st and 2nd call)

### 3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

The student must demonstrate that he/she has achieved the anticipated learning outcomes through the following assessment activities:

#### Option 1

This option is aimed at those students who can regularly follow the activities of the course (both the practical and the theoretical sessions). In this case, the evaluation will consist in the realization of a global assessment test in the exam period on the day established by the School, which will consist of the following parts:

? Individual test. It is intended to evaluate if the student has understood the basic concepts of the course, master the terminology and is able to apply these concepts to the understanding of small exercises or problems. The test will be 30% of the student's grade.

? Case study resolution. It will be within the individual test. It is intended to evaluate if the students know how to solve a case study. It is not part of the grade, and simply means pass / fail.

? Practical work(s). Throughout the course one or more practical works will be carried out, which must be delivered and presented on the day the global assessment test takes place. The quality of the documentation presented by the work team as well as the defense thereof will be valued, and will account for 70% of the student's grade. It will be mandatory to carry out these practical work(s) as a group. For the evaluation of these practical works the professors will be able to propose systems of evaluation by peers, in which the own students will evaluate the performance of their teammates during the accomplishment of the works and / or practical cases and that will serve to determine the qualification of each student in the practical part.

#### Option 2

This option is aimed at those students who can not participate in the learning activities of the course on a regular basis. In this case, the evaluation will consist in the realization of a global assessment test identical to that of Option 1, with the difference that the practical work(s) will be carried out individually.

In any of both options, in order to pass the course it is necessary that the student has obtained a grade equal to or higher than 5.0 in each of the tasks that comprise the global assessment test. In case of not meeting this condition, the final grade

will be that of suspense 4.0. unless the result of the average between the theoretical exam and the evaluation of the practical work is less than 4.0, in which case the final grade will correspond to that value.

## **4.Methodology, learning tasks, syllabus and resources**

### **4.1.Methodological overview**

The learning process that has been designed for this subject is based on the following: The subject is oriented through the methodology of Project-Based Learning. Students organized in groups live, through the realization of their project, the experience of performing professional work in the field of ergonomics.

### **4.2.Learning tasks**

The course includes the following learning tasks:

- Lectures (30h). Weekly sessions of two hours.
- Resolution of problems and cases (15h). Students will complete a series of problem and case study sessions throughout the course.
- Personal tutor-student tutelage. (15h). The work teams will carry out a one-hour session of tutoring and follow-up of the practical work each week. The sessions will be focused so that the students solve doubts and can develop the work entrusted to them.
- Realization of practical application or research works (60h). The realization of works and / or practical cases in equipment is considered the fundamental teaching activity where the student will acquire most of the competences and the learning results of this subject. The teams will be formed by a variable number of students between 3 and 8 and will be periodically monitored by a teacher-tutor who will act as a facilitator of learning.
- Effective personal study (approximately 25 hours). Referred to the estimated average time necessary for the theory exam preparation.
- Evaluation test (5h). The expected duration for the theoretical evaluation test is 2.5 hours. Additionally, the students will defend their work and will attend the work presentations of the rest of their classmates, to whom they will dedicate approximately 2.5 hours. In the event that the global test is chosen, in which case, the total duration of the test (theory and practice) will be 5h.

### **4.3.Syllabus**

The course will address the following topics:

- 1.- Anthropometry.
- 2.- Biomechanics.
- 3.- Design for the task.
- 4.- Environmental ergonomics.

### **4.4.Course planning and calendar**

At the beginning of the course and depending on the calendar and the timetable determined by the EINA, the detailed programming will be provided to the students.

The most important activities to take into account in this subject are:

1. Group formation
2. Selection of works
3. Oral defense of the works
4. Theoretical exam - Band of exams

Consult the website of the EINA, <https://eina.unizar.es/> to obtain information about:

- ? Academic calendar (period of classes and non-class periods, festivities, exam period).
- ? Hours and classrooms.
- ? Dates in which the examinations of the official calls of the subject will take place.
- ? Teacher tutoring schedules.

### **4.5.Bibliography and recommended resources**