

## 30178 - Human factors

### Syllabus Information

**Academic Year:** 2022/23

**Subject:** 30178 - Human factors

**Faculty / School:** 179 - Centro Universitario de la Defensa - Zaragoza

**Degree:** 563 - Bachelor's Degree in Industrial Organisational Engineering

**ECTS:** 6.0

**Year:** 4

**Semester:** First semester

**Subject Type:** Optional

**Module:**

## 1. General information

### 1.1. Aims of the course

- To know the main human factors of aviation.
- To recognize the different physiological processes that occur during the flight.
- To learn the main principles about aviation psychology.

Specialization in Defence: These approaches and objectives are in line with the following Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda (<https://www.un.org/sustainabledevelopment/>), in such a way that the acquisition of the course learning outcomes provides training and competence to contribute to their achievement to some degree.

- Objective 3: Good health and well-being

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

The subject is part of the Aviation module of the Industrial Organization Engineering Degree. This course is of great importance for the officers which are part of the Aviation of the Army.

The course allows the future officers of the Army to become familiar with the necessary knowledge they need to perform their duties as helicopter pilots. Thereby, it contributes to the development of their physical and mental health.

### 1.3. Recommendations to take this course

It is a subject of the fundamental specialty of aviation.

The students must have passed most of the degree, so they should be able to successfully complete it.

## 2. Learning goals

### 2.1. Competences

- Ability to plan, budget, organise, manage and monitor tasks, people and resources.
- Ability to solve problems and take decisions with initiative, creativity and critical reasoning.
- Ability to communicate knowledge and skills in Spanish.
- Ability to work in a multidisciplinary group and in a multilingual setting.
- Ability to continue learning and develop self-learning strategies.
- Familiarity with the human factors involved in aviation, the general instructions related to the main objectives of the Cockpit Resource Management (CRM), human (individual and group) performance and limitations.

### 2.2. Learning goals

- Familiarity with the human factors involved in aviation, the general instructions related to the main objectives of the Cockpit Resource Management (CRM), human (individual and group) performance and limitations.
- Recognition and interpretation of the different physiological processes that occur during the flight.

-Development of optimal strategies for the management of human behavior in aviation.

### 2.3. Importance of learning goals

The learning goals are part of the skills that students should acquire as part of their training in their fundamental specialty.

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

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

#### FIRST CALL

##### Continuous assessment.

The students will be able to pass the total of the subject by the continuous assessment procedure. To do this, they must demonstrate that they have achieved the expected learning outcomes by passing the assessment instruments indicated below, which will be carried out throughout the semester:

- Test 1: Theoretical-practical exam on the first part of the theoretical contents of the subject. Its weight in the final grade is 25%.
- Test 2: Theoretical-practical exam on the second part of the theoretical contents of the subject. Its weight in the final grade is 25%.
- Test 3: Written and practical work in teams on the contents of the Communication topic. Its weight in the final grade is 30%.
- Test 4: Written and practical work in teams on the contents of the topic of Study of the groups. Its weight in the final grade is 20%.

The final continuous assessment score (100%) will be calculated based on the specific weight of each continuous assessment test. To pass the subject, the student must obtain a final grade greater than or equal to 5.

##### Global Test:

The students who do not pass the subject by continuous assessment or who would like to improve their grades, will have the right to take the Global Test set in the academic calendar, prevailing, in any case, the best of both grades. This global test will be equivalent to the continuous assessment test described and will have the 100% weight in the final grade. It will consist of the development of several open-ended questions and practical exercises. To pass the subject, the student must obtain a final grade greater than or equal to 5.

#### SECOND CALL

##### Global Test:

Students who do not pass the subject in the first call may take a global test set in the academic calendar for the second call. It will be equivalent to the continuous evaluation tests described and will have a weight of 100% in the final grade. It will consist of the development of several open-ended questions and practical exercises. To pass the subject, the student must obtain a final grade greater than or equal to 5.

##### Assessment criteria

The evaluation criteria will be based on the correctness of the answers and the adequate argumentation before the questions raised, the critical judgment developed, the elaboration and originality of the works. The aspects of formal, logical, and drafting correctness in those of the texts submitted will also be considered.

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

### 4.1. Methodological overview

The approach, methodology and assessment of this course is prepared to be equivalent in any teaching scenario. It will be adjusted to the socio-sanitary conditions of each moment, as well as to the indications given by the competent authorities.

So, the methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as:

- Lectures.
- Practical activities.
- Academic works (individual and in groups).
- Assimilation works during classes.
- Autonomous study.

### 4.2. Learning tasks

The course includes the following learning tasks:

- Presentation of the contents in classes and resolution, by the student, of theoretical and practical problems.
- Academic works (individual and in groups).

### **4.3. Syllabus**

The course will address the following topics:

- 1-Human factors in aviation: basic safety and performance concepts.
- 2- Fundamentals of flight physiology.
- 3- Principles of aviation psychology.

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

Calendar of sessions and exam dates:

It will be announced by the teacher, both in class and through the Moodle platform.

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

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=30178>