Universidad Zaragoza

Academic Year/course: 2023/24

30180 - Avionics and aircraft general knowledge

Syllabus Information

Academic year: 2023/24
Subject: 30180 - Avionics and aircraft general knowledge
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

The subject prepares the future pilot to understand and know the vehicles, instrumentation and concepts used in the aeronautical environment in which they will develop their profession. It also works on the acquisition of a series of general management competencies, decision making, communication skills, teamwork and self-learning skills.

These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (https://www.un.org/sustainabledevelopment/es/): SDG-9 "Industry, innovation and infrastructure" and SDG-16 "Peace, justice and strong institutions". In such a way that the acquisition of the learning results of the subject provides training and knowledge, skills and competencies to contribute in some measure to their achievement.

2. Learning results

1. Knows the fundamentals, terms, concepts and nomenclature of the aeronautical environment.
2. Knows the different types of aircraft and the systems that integrate them.
3. Identifies and describes the different elements that allow the flight and control of aircraft.
4. Knows the key elements that affect the piloting of aircraft.
5. Works in a professional environment, performing tasks typical of first jobs as an officer.

3. Syllabus

1. Aircraft classification.
2. The terrestrial planetary environment.
3. Aircraft architecture.
4. Introduction to fluid mechanics.
5. Aerodynamic surfaces and control elements.
6. Propulsion plant.
7. Aircraft performance.

4. Academic activities

Lectures [38 hours]: sessions to develop the content of the subject

Practical classes [12 hours]: problem solving sessions and simple case studies.

Elaboration of an English-Spanish aeronautical glossary [2 hours]: class work with the teacher looking for the meaning of the most common terms used in aeronautics. It should be continued as personal work.

Evaluation tests [8 hours]: objective and short answer tests, developmental and problem solving tests and presentation of the

results of a group work.

Study and personal work. Group work. Tutorials. [90 hours].

5. Assessment system

First call, continuous evaluation.

1. Objective and short answer tests (20%). The syllabus will correspond to the first three topics.

2. Developmental and problem-solving exam (50%). The syllabus will correspond to that of the entire subject

3. Theoretical and practical group work (20%). It will be a study of a military helicopter, according to the subject contents. It will be necessary to rotate functions within the team, take minutes of the work meetings, write a report and present it.

4. Preparation of an English-Spanish glossary of aeronautical terms (10%). It will be necessary to find not only the translation, but also its meaning and a figure that illustrates the term in question.

First call, global test.

1. Oral examination (100%). It will be an oral exam on all the contents of the subject to which the student may bring the materials they deems appropriate to prepare their answer during half an hour, after knowing the questions that they will have to answer. In their oral presentation they may not make use of any means of support. Instructions will be provided on Moodle for the oral exam, which will be videotaped for the record. The recording of the exam will be deleted once the review period has passed..

Second call, global test.

1. Oral examination (100%). Same organization as the global test in the first call.

Summary table.

Assessment instruments:	**Weighting**	**RA-1**	**RA-2**	**RA-3**	**RA-4**	**RA-5**
Objective and short answer tests	20%	x	x			
Developmental test and problems	50%	x	x	x	x	
Group work	20%		x	x		x
Glossary development	10%	x				
Oral examination, first call	100%	x	x	x	x	x
Oral exam, second call	100%	x	x	x	x	x