

1. BASIC INFORMATION

Course	Aerospace Production and Projects
Degree program	Degree in Aerospace Engineering of Aircraft
School	Architecture, Engineering and Design
Year	3
ECTS	6 ECTS
Credit type	Mandatory
Language(s)	English
Delivery mode	Face to face
Semester	First semester
Academic year	2023/2024
Coordinating professor	Ignacio José Márquez

2. PRESENTATION

This subject represents an introduction to conventional and non-conventional manufacturing processes for the aerospace industry being focused on conventional and nonconventional processes of productions. As a part of manufacturing process contents, the manufacturing process management and its relation with quality is introduced. The student will acquire as well the basic knowledge to manage aeronautical projects from the initial phase to the final production.

3. COMPETENCIES AND LEARNING OUTCOMES

Core competencies:

- CB3: That students have the ability to gather and interpret relevant data (usually within their field of study) to make judgments that include reflection on relevant social, scientific or ethical.
- CB4: To allow students to communicate information, ideas, problems and solutions both to a specialized and non-specialized audience.
- CB5: That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.

Cross-curricular competencies:

- CT2: Planning, definition, direction and project management of design, stress analysis and production in the field of aeronautical engineering aimed, according to the knowledge acquired as provided in paragraph 5 of the Decree CIN/308/2009, vehicles aerospace.

- CT14: Problem Solving with initiative, decision making, creativity, and critical thinking, professionally, and the preparation and defense of arguments (Troubleshooting).
- CT16: To communicate and convey information, ideas and skills in the student's field of specialization, either in writing or orally, both to skilled and unskilled audiences (communication skills).

Specific competencies:

- CE12: To understand the manufacturing processes.
- CE19: Applied knowledge of: the science and technology of materials, mechanics and thermodynamics, fluid mechanics, aerodynamics and flight mechanics, navigation and air traffic, aerospace technology, theory of structures, air transport, economy and production projects; impact on environment.

Notes: UNIQUE LEVEL: Competence developed at one level. Level 1 (N1): awareness about the importance of competences and basic application of it to several situations. Level 2(N2): interiorization and skillful handling of competences. Level 3 (N3): Full interiorization and handling of competences at any needed situation.

Learning outcomes:

- LO20: To conduct studies by integrating the technologies and engineering procedures which are developed in the competencies of this modules.

The following table shows the relationship between the competencies developed during the course and the learning outcomes pursued:

Competencies	Learning outcomes
CB3, CB4, CB5, CT12, CT14, CT16, CE12, CE19	LO20

4. CONTENT

The subject " Aerospace Production and Projects" covers the following topics:

- Manufacturing processes
- Production systems
- Metrology
- Production management and economy. Quality
- Aerospace projects: types and their management
- Application to Satellite Design (Carbon fiber manufacturing processes)
- Application to Satellite Design (Project Control)

5. TEACHING-LEARNING METHODOLOGIES

The types of teaching-learning methodologies used are indicated below:

- Survey of goals and interests of the students

- Master classes
- Laboratory practices
- Research and problem solving as teamwork
- Field experiences, conferences, visits to companies and institutions

6. LEARNING ACTIVITIES

Listed below are the types of learning activities and the time the student will spend on each one:

Learning activity	Number of hours
Lectures / masterclasses	20 hours
Integration of team work	60 hours
Self-study	50 hours
Mentoring, academic monitoring and assessment	20 hours
TOTAL	150 hours

7. ASSESSMENT

Listed below are the assessment systems used and the weight each one carries towards the final course grade:

Assessment system	Weight
Exam, test and other type of assessment.	30%-35%
Reports, articles and informs.	15%-30%
Alternative system of assessment	15%-30%
Conferences, company-tour visit and experiences in situ	10%-10%
Transversal skills (rubric)	10%-15%

When you access the course on the *Campus Virtual*, you'll find a description of the assessment activities you have to complete, as well as the delivery deadline and assessment procedure for each one.

7.1. First exam period

To pass the subject in ordinary period you will need to obtain:

- A minimum mark of 5 over 10 in every evaluation method:
- A class attendance of 50% is required.

In any case, you will need to obtain a mark higher or equal to 4.0 in the final examination in order that it can be averaged with the rest of the activities. Otherwise, the final course grade will be equal to the mark in the final exam.

7.2. Second exam period

To pass the subject in extraordinary call the students must obtain a mark higher or equal to 5/10 in the final grading (as a weighted average) of the course.

In any case, the students must obtain a mark higher or equal to 4/10 in the extraordinary examination and specific extraordinary assignment so that they can be averaged with the rest of the activities.

The students must upload all the assignments not delivered in ordinary period in order to be graded in the extraordinary call.

8. SCHEDULE

This table shows the delivery deadline for each assessable activity in the course:

Assessable activities	Deadline
Manufacturing process investigations	Check Canvas
Practical problems solving	Check Canvas
Satellite design principle adaptation	Check Canvas
Satellite Manufacturing process Design	Check Canvas
Exam and Tests	Check Canvas

This schedule may be subject to changes for logistical reasons relating to the activities. The student will be notified of any change as and when appropriate.

9. BIBLIOGRAPHY

- Teacher's notes uploaded in virtual campus
- Advanced materials for aerospace components: world business brief : a bibliographic guide to current technical literature, consisting of abstracts and citations drawn from the world's most comprehensive databases in the field: Autor:Materials Information (Information service); Cambridge Scientific Abstracts, Inc. Editorial:Bethesda, MD : Materials Information/Cambridge Scientific Abstracts, 2005.
- Aerospace manufacturing processes. Autor: Pradip K Saha-. Editorial:Boca Raton : CRC Press, 2017.
- Manufacturing Processes Reference Guide. Autor: Robert H. Todd, Dell K. Allen, Leo Alting. Industrial Press Inc., 1994 - 486 páginas
- Aerospace Project Management Handbook. Edited By M. Ann Garrison Darrin, Patrick A. Stadter. Copyright Year 2017.

- Quality management system for the aerospace industry. January 2012 *Journal of Engineering Management and Competitiveness* 2(1)

10. DIVERSITY MANAGEMENT UNIT

From the Educational Guidance and Diversity Unit we offer support to our students throughout their university life to help them reach their academic achievements. Other main actions are the students inclusions with specific educational needs, universal accessibility on the different campuses of the university and equal opportunities.

From this unit we offer to our students:

1. Accompaniment and follow-up by means of counselling and personalized plans for students who need to improve their academic performance.
2. In terms of attention to diversity, non-significant curricular adjustments are made in terms of methodology and assessment for those students with specific educational needs, pursuing an equal opportunities for all students.
3. We offer students different extracurricular resources to develop different competences that will encourage their personal and professional development.
4. Vocational guidance through the provision of tools and counselling to students with vocational doubts or who believe they have made a mistake in their choice of degree.

Students in need of educational support can write to us at:

orientacioneducativa@universidadeuropea.es

11. ONLINE SURVEYS

Your opinion matters!

The Universidad Europea encourages you to participate in several surveys which help identify the strengths and areas we need to improve regarding professors, degree programs and the teaching-learning process.

The surveys will be made available in the “surveys” section in virtual campus or via e-mail.

Your assessment is necessary for us to improve.

Thank you very much for your participation.