

Degree	Type	Year
Aeronautical Management	OB	2

Contact

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Teachers

Albert Gragera Llado

Teaching groups languages

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Prerequisites

Students are required to have acquired the basic knowledge from the subject "Introduction to Economics"

Objectives and Contextualisation

The purpose of the subject is for students to know the most relevant economic aspects of air transport, bearing in mind that we are dealing with a dynamic industry that operates in a very changing international framework. The topics that will be discussed will be the demand for air transport, the technological characterization of airlines and airports, the basic principles of price fixing, the structure and organization of markets, the economic regulation of the sector; the presence of externalities and, finally, the economic evaluation of infrastructure investments. In each of the sections of the program, a specific application to air transport will be studied.

The theoretical knowledge imparted is complemented by a set of practical activities. The practice sessions aim to familiarize the student with the basic concepts of the subject through a series of activities that bring them closer to the reality of the air transport economy. The student will be able to apply theoretical concepts to practical problems and exercises and treat and understand economic data related to air transport. The practical classes will also focus on solving problems with the basic instruments of microeconomics.

Competences

- Act ethically and professionally.

- Allocate and manage aircraft turnaround resources efficiently.
- Communication.
- Make choices on investment projects.
- Personal attitude.
- Personal work habits.
- Thinking skills.
- Work in teams.

Learning Outcomes

1. Accept and respect the role of the various team members and the different levels of dependence within the team.
2. Adapt to multidisciplinary and international environments.
3. Adapt to unexpected circumstances.
4. Analyse the viability of investment processes.
5. Communicate knowledge and findings efficiently, both orally and in writing, both in professional situations and with a non-expert audience.
6. Critically assess the work done.
7. Develop critical thought and reasoning.
8. Develop independent learning strategies.
9. Develop scientific thinking skills.
10. Develop systemic thinking.
11. Identify, manage and resolve conflicts.
12. Maintain a proactive and dynamic attitude towards career progression, personal growth and continuous professional development. Have the will to succeed.
13. Make decisions.
14. Make efficient use of ICT in communicating ideas and results.
15. Manage time and available resources. Work in an organised manner.
16. Prevent and solve problems.
17. Relate the different components of air transport to the resources of all components of the economic environment involved.
18. Respect diversity in ideas, people and situations.
19. Take on the social, ethical and professional responsibilities deriving from professional practice.
20. Work cooperatively.
21. Work independently.
22. Working in complex or uncertain environments and with limited resources.

Content

1. Introduction

Theory: The economic characteristics of air transport. Transport services and infrastructure.

Practice: Brief presentation of the objectives of the practical sessions. Review of fundamental statistics of the air transport economy. Review of some websites of interest for the course. Reports and statistics prepared by the DG of Mobility and Transport of the EU.

2. The demand for transport

Theory: Introduction and main characteristics. The transportation demand function. The concept of elasticity. The magnitude of air transport demand elasticities. The value of time in transport. Introduction to demand forecasting.

Practice: Summary of the calculation of the maximization problem. Resolution of an exercise. Analysis and discussion of price elasticity, income elasticity and cross elasticity values. Case study: behaviour of air demand in Spain. Substitutability and complementarity between modes of transport.

3. Characterization of transport technology

Theory: Definition and measurement of output. Production function. Indivisibilities and capacity jumps. Scale economies. The network concept: the hub-spoke configuration.

Practices: Definition and calculation of productivity ratios. International comparison of airport efficiency.

4. Transport costs

Theory: Characterization of transport costs. Accounting approach to airline costs. Characterization of the cost function for airports. Air transport as a network industry: joint costs, economies of scale, economies of density and economies of scope.

Practice: Solving cost function exercises. Calculate economies of scale and economies of density. Cost comparison traditional company versus low-cost company.

5. External costs

Theory: Definition of external cost. Instruments to correct externalities. Congestion. Environmental impacts: noise and emissions. Introduction to the economic evaluation of externalities.

Practice: Application to air transport of the emission rights trading system in the EU and at international level (CORSIA - ICAO).

6. Pricing

Theory: Pricing in an unrestricted context. Implications of optimal pricing for financing. Pricing in the presence of indivisibilities and capacity constraints. Prices with differentiated demands. Airline pricing.

Practice: Resolution exercise calculating optimal prices. Role game simulating airline pricing. Analysis of AENA's pricing criteria.

7. Regulation of air transport

Theory: Economic arguments that justify regulation. Criticisms of the traditional approach to regulation. Determinants of liberalization in the air sector. The liberalization process in the US, Europe and internationally. The consequences of the liberalization process. The competition of low-cost companies. Regulation of airports as a natural monopoly.

Practice: Study of European policy in air transport. Debate on future challenges in air transport regulation.

8. The economic evaluation of investments in transport.

Theory: Introduction to cost benefit analysis applied to investments in airports.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Case studies and applications	15	0.6	2, 4, 1, 19, 6, 5, 9, 10, 7, 14, 15, 11, 12, 13, 16, 17, 18, 20
Lectures	30	1.2	19, 9, 10, 17
Type: Supervised			

Office hours	6	0.24	19, 5, 17, 18
Type: Autonomous			
Self-learning activities, exercises and course project	90	3.6	2, 3, 1, 6, 5, 10, 8, 7, 15, 11, 12, 13, 16, 17, 18, 20, 21, 22

The theoretical sessions consist of the development by the teacher of the different contents of the subject. Students have a reference manual and complementary bibliography for each lesson. A script detailing the structure of the sessions is provided for each lesson in the program. The class is accompanied by documentation referring to practical cases, examples or statistics that are available on the virtual campus.

The practice sessions focus on three types of activities. In the first, the teacher summarizes the most relevant theoretical content of the course and presents the practical exercises that aim to help understand the theoretical concepts and foster the students' analytical ability to solve problems with the microeconomics tools developed throughout the course. In the second, the teacher presents a case study in relation to the development made in the theoretical sessions. In the third, the students present and discuss the essay they have to prepare. Students must complete an essay throughout the course that they must choose from among the topics proposed by the teacher. The topics correspond to the different lessons of the program and the essays will be presented throughout the course following the order of the program.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continuous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Course project	15%	2	0.08	6, 5, 9, 10, 7, 14, 17
Mid-term exam	35%	2	0.08	9, 10, 8, 7, 15, 17, 21
Practical sessions exercises	15%	3	0.12	2, 3, 4, 1, 19, 6, 5, 9, 10, 8, 7, 14, 15, 11, 12, 13, 16, 17, 18, 20, 21, 22
Second exam	35%	2	0.08	4, 9, 10, 8, 7, 15, 17, 21

Assessment

The course will be assessed continuously throughout the academic term, according to the following evaluation criteria:

Theory Module

1. First written exam - 35%
2. Second written exam - 35%

Practical Module

1. Practical exercises - 15%

2. Course project - 15%

The theoretical content of the course will be assessed through two written exams. The first exam will be held approximately halfway through the course, and the second will take place on the date set by the School for the final exam. Each exam carries equal weight in the final grade (35%). The first exam covers the content from the first part of the course; if passed, the student will not need to take that part again in the second exam.

The practical module will be assessed by submitting exercises (cases) from the practical sessions and a course project. For the final grade, the best three practical exercises will be considered (each contributing 5% to the final grade). A course project will account for 15% of the final grade, including its presentation and in-class discussion. Both the practical exercises and the project must be completed in groups of up to four students (the instructor must approve other group configurations). Students must strictly adhere to the scheduled hand-ins, submission of practical exercises, and the course project.

The final grade is calculated as follows:

$35\%(\text{first written exam grade}) + 35\%(\text{second written exam grade}) + 15\%(\text{average grade of the best three practical exercises}) + 15\%(\text{course project grade})$

The subject is considered passed if the final grade is equal to or higher than 5, and both written exams are graded above 4.

If the course is not passed, students may be eligible for re-evaluation, provided they meet the conditions described in the "Retake" section of this guide.

Dates for continuous assessment and submission deadlines will be published on the virtual campus and may be subject to scheduling changes due to unforeseen circumstances. Any such changes will be communicated via the virtual campus, which is considered the standard platform for communication between faculty and students. For each assessment activity, a place, date, and time will be indicated for students to review the activity with the instructor.

Single Assessment or Synthesis Exam

The single assessment (and/or synthesis exam) consists of a comprehensive exam covering all course content, including both theory and practice. This exam might include both written and oral questions. Student attendance is mandatory on the day of the single assessment. The exam date will coincide with the official final exam date as published in the School's assessment calendar.

Students must request the single assessment through Academic Services within the specified timeframe and using the procedure published on the School of Engineering's website.

The same recovery system as for continuous assessment will apply.

The final grade review process follows the same procedure as for continuous assessment.

Recovery Process

To be eligible for recovery, students must have previously been assessed in activities that together represent at least two-thirds of the total course grade (more than 50% of the final grade). Only students whose average grade for all assessment activities is equal to or greater than 3.5 may participate in the recovery process. This average grade requirement also applies to students who opted for the single assessment.

The recovery consists of a written exam covering all course topics. The exam date will be included in the School's exam calendar. Students who take and pass the exam will receive a final grade of 5. Otherwise, the original grade will stand.

Non-Assessable Students

Students who begin the continuous assessment process will receive a final grade of pass or fail. Only students who have not taken either of the two written exams will be considered non-assessable.

Use of Artificial Intelligence (AI)

In this subject, the use of AI is permitted in a restricted manner as a support tool for developing practical exercises and the course project. Its use must be limited to improving the quality of submissions (copilot mode). Evidence of usage beyond this will be penalised in the grading of the submissions.

Student Misconduct

Without prejudice to other disciplinary actions deemed appropriate and under current academic regulations, any misconduct by the student that could affect the grade of an assessment will result in a grade of zero. Therefore, plagiarising, copying, or allowing copying of any exercise or other assessment activity will result in a zero for that activity. If passing that activity is required to pass the course, the entire course will be failed. Assessment activities graded in this way are not eligible for recovery, and the student will automatically fail the subject for the academic year with no opportunity to retake it.

Bibliography

Course manual

Vasigh, B., K. Fleming & T. Tacker, Introduction to Air Transport Economics : From theory to Applications, 4th edition, Routledge, 2024

Recommended references

Rus, G. de, J. Campos i G. Nombela, *Economía del Transporte*, Ed. A. Bosch, Barcelona, 2003.

Button, K.J., *Wings across Europe: Towards an efficient European air transport system*, Aldershot, Ashgate, 2004

Doganis, R. *Flying off course: Airline Economics and marketing*, 5th edition, Routledge, 2019.

Graham, A, *Managing Airports: an international perspective*, 4th edition, Butterworth-Heinemann, 2014

Hanlon, J.P., *Global Airlines: Competition in a transnational industry*, Butterworth-Heinemann, 2007

Specific references will be provided for each topic

Software

Spreadsheet (Excel)

Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject.

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	11	Catalan	second semester	afternoon

(PAUL) Classroom practices	12	Catalan	second semester	afternoon
(SEM) Seminars	21	Catalan	second semester	afternoon
(SEM) Seminars	22	Catalan	second semester	afternoon
(SEM) Seminars	23	Catalan	second semester	afternoon
(TE) Theory	11	Catalan	second semester	afternoon