

Air Transport Economics

Code: 101751
ECTS Credits: 6

Degree	Type	Year	Semester
2501233 Aeronautical Management	OB	2	2

Contact

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Teaching groups languages

You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject. Please note that this information is provisional until 30 November 2023.

Teachers

Jorge Rodrigo Morera Ballester

Albert Gragera Llado

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

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

Learning Outcomes

1. Analyse the viability of investment processes.
2. Communicate knowledge and findings efficiently, both orally and in writing, both in professional situations and with a non-expert audience.
3. Critically assess the work done.
4. Develop critical thought and reasoning.
5. Develop independent learning strategies.
6. Develop scientific thinking skills.
7. Develop systemic thinking.
8. Make efficient use of ICT in communicating ideas and results.
9. Manage time and available resources. Work in an organised manner.
10. Relate the different components of air transport to the resources of all components of the economic environment involved.
11. Work independently.

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.

Methodology

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.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Case studies and applications	15	0.6	10
Lectures	30	1.2	1, 10
Type: Supervised			
Office hours	6	0.24	10
Type: Autonomous			
Self-learning activities, exercises and essay	90	3.6	1, 10

Assessment

The assessment will be carried out continuously throughout the course, according to the following assessments:

1. First written test 35%
2. Second written test 35%
3. Practical exercises and essay 30%

The evaluation of the theoretical content of the subject will be done through two written tests. The first will take place approximately halfway through the year and the second on the date set by the School for the final exam. Each of the tests has the same weight in the final grade (35 %). The first test includes the contents of the first part of the subject, and if it is passed, it will not be necessary to take the corresponding part included in the second test.

The evaluation of the practical module will be done in the following way: the three best practical exercises among all those carried out (6% final grade each), completion of an essay, presentation and discussion of the same in class (12% final grade). Both the exercises and the essay must be done in groups of two; in a justified way it can be done individually or in groups of three. At the beginning of the course, the necessary documentation for the exercises will be delivered. The student must scrupulously respect the dates set for the practical tests and essay.

The average grade of the subject is obtained as: $35\% \times (\text{grade of the first test}) + 35\% \times (\text{grade of the second test}) + 12\% \times (\text{grade of the essay}) + 6\% \times (\text{grade of first year}) + 6\% \times (\text{grade of the second year}) + 6\% \times (\text{grade of the third year})$

The subject will be considered passed if the following two requirements are met:

1. the average grade of the subject is equal to or higher than 5 and,
 2. the average grade of the two partial exams is equal to or higher than 4.
- If a student fulfils the first requirement but does not fulfil the second, he/she will have an average grade for the subject of 4.5 and will be able to take the re-evaluation test in accordance with what is established in the section " Recovery Process" that you will find later.
 - If a student meets the second requirement but does not meet the first, or does not meet either, he/she will have the average grade of the subject that arises from the direct application of the previous weightings, and will be able to take the re-test - evaluation in accordance with what is established in the "Retake" section that you will find later.

The dates of continuous assessment and delivery of work will be published on the virtual campus and may be subject to schedule changes for reasons of adaptation to possible incidents. These changes will always be

reported on the virtual campus as it is understood that this is the usual platform for the exchange of information between teachers and students. For each assessment activity, a review place, date and time will be indicated when the student can review the activity with the teacher.

Comprehensive evaluation

Students are entitled to request a comprehensive evaluation. The comprehensive evaluation consists of an exam on the content of the entire course, both theory and practice. Student attendance is mandatory on the day of the exam. The date will be the same as that of the final exam of the semester that is published by the School.

The comprehensive evaluation must be requested at the Academic Management (Gestió Acadèmica) according to the procedure and deadline established and which will be published on the School's website.

For the retake procedure, no distinction is made between students who have followed the continuous evaluation and those who have opted for the comprehensive evaluation. All will be re-assessed using the same test or evidence.

The review of the final qualification follows the same procedure as for the continuous evaluation.

Retake

"To be eligible to participate in the retake process, it is required for students to have been previously evaluated for at least two thirds of the total evaluation activities of the subject." Section 3 of Article 112 (UAB Academic Regulations). Additionally, it is required that the student to have achieved an average grade of the subject between 3.5 and 4.9. The essay and exercises can't be retaken.

The retake consists of a written exam that includes all the topics of the course. The date of the retake exam will be posted in the calendar of evaluation activities of the School. Students who take this exam and pass, will get a grade of 5. Otherwise, the grade will remain unchanged, and hence, student will fail the course.

Not assessable

Students who start the continuous evaluation process will have a final grade of pass or fail for the subject. Only those students who have not taken either of the two written tests will have the status of non-assessable.

Irregularities in evaluation activities

In spite of other disciplinary measures deemed appropriate, and in accordance with current academic regulations, *"in the case that the student makes any irregularity that could lead to a significant variation in the grade of an evaluation activity, it will be graded with a 0, regardless of the disciplinary process that can be instructed. In case of various irregularities occur in the evaluation of the same subject, the final grade of this subject will be 0"*. **Section 10 of Article 116. Results of the evaluation. (UAB Academic Regulations).**

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exercises, essay and presentations	30%	5	0.2	1, 3, 2, 6, 7, 5, 4, 8, 9, 10, 11
Mid-term exam	35%	2	0.08	6, 7, 5, 4, 9, 10, 11
Second exam	35%	2	0.08	1, 6, 7, 5, 4, 9, 10, 11

Bibliography

Course manual

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

Recommended references

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

Vasigh, B., K. Fleming & T. Tacker, *Introduction to Air Transport Economics : From theory to Applications*, 3rd edition, Ashgate, 2018

Specific references will be provided for each topic

Software

Spreadsheet (Excel)