Universitat Autònoma de Barcelona

2021/2022

Air Transport Economics

Code: 101751
ECTS Credits: 6

Degree	Type	Year	Semester
2501233 Aeronautical Management	OB	2	2

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: No

Teachers

Kirian Campoy Cano

Prerequisites

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

Objectives and Contextualisation

The aim of the course is that students learn the most relevant economic aspects of air transport, taking into account that it is a dynamic industry that operates in a changing international framework. The topics to be discussed will be air transport demand, the technological characterization of airlines and airports, the basic principles of pricing, 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 section, a specific application related to air transport will be presented. Moreover, the impact of COVID19 will be included where appropriate.

The theoretical lectures are complemented by a set of practical activities. The practical sessions aim to familiarize the student with the basic concepts of the course through a series of activities that bring her closer to the reality of the economics of air transport. The student will be able to apply the theoretical concepts to problems and practical exercises and to exploit 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. Transportation services and infrastructure.

Practical activities: Brief presentation of the objectives of the practical sessions. - Review of the main statistical data related to air transport economics. - Review of some websites of interest for the course. - Reports and statistics prepared by the D.G. of Transport of the EU.

2. The demand for transport

Theory: Introduction and main characteristics. The transport demand function. The concept of elasticity. The magnitude of the elasticities for air transport demand. The value of time. Introduction to demand forecasting. Implications of COVID19 on air demand.

Practical activities: Resolution of an exercise in class. Analysis and discussion of the magnitude of price elasticity, income elasticity and cross-elasticity. Case study: Behaviour of air demand in Spain

3. Characterization of transport technology

Theory: Definition and measurement of output. Production function. Indivisibilities and capacity constraints. Economies of scale. The network concept: the hub-spoke configuration. A case study: the impacts of COVID19.

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

4. Transportation costs

Theory: Characterization of transport costs. The accounting approach to the airline costs. Cost functions for airports. Air transport as a network industry: joint costs, economies of scale, economies of density and economies of scope.

Practical activities: Resolution of cost function exercises. Calculation of economies of scale and density. Cost structure comparison: full service vs low-cost.

5. The external costs

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

6. Pricing

Theory: Pricing in a first-best context. Implications of optimal pricing for infrastructure financing. Pricing in the presence of indivisibilities and capacity constraints. Prices with differentiated demands. Airlines pricing: price discrimination and yield management.

Practical activities: Computing optimal prices. Discussion of the chapter R. Doganis: "Pricing policies and fare structure". Analysis of pricing criteria for AENA airports.

7. Regulation of air transport

Theory: Economic arguments in favour of regulation. Criticism to the traditional approach to regulation. Determining factors of the liberalization of the air sector. The process of liberalization in the US, Europe and the international agreements.
The consequences of the liberalization process. The competition from low-cost companies. Implications for competition of the state aid to airline companies in the context of the COVID. Regulation of airports as a natural monopoly.

Practical activities: Study of the European policy in air transport.

8. The economic evaluation transport investments.

Theory: Introduction to cost benefit analysis applied to airports' investment.

Methodology

The theoretical sessions consist of standard lectures in class. The students have a reference manual and complementary bibliography for each lecture. For each lecture of the syllabus, an outline is provided where the structure of the sessions is detailed. The class is accompanied by documentation available at the virtual campus.

The practical sessions focus on three types of activities. In the first, the lecturer summarizes the most relevant theoretical contents of the course and presents the practical exercises that are intended to help understand the theoretical concepts and encourage the analytical capacity of students to solve problems with the tools of microeconomics developed throughout the course. In the second, the professor presents a case study related to the theoretical sessions. In the third the students present and discuss their essay. The students have to make an essay on one of the topics proposed. The topics correspond to the different lessons of the syllabus and the essays will be presented throughout the course.

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Around 15 minutes of a class will be allocated to allow students to answer the surveys about teaching performance and evaluation of the subject.

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

Assessment will be carried out continuously throughout the course, in accordance with the following criteria:

1. Mid-term exam: 35%

2. Final exam (second part): 35%

3. Exercises, case studies and essay: 30%.

The evaluation of the theoretical content of the subject will be carried out through two written tests. The first one will take place in the middle of the term and the second in the date set by the School for the final exam. Each of the tests has the same weight in the final assessment (35%).

The evaluation of the practical module consists of: three practical exercises (6% final grade each), a written essay to be presented and discussed in class (12% final grade). Both the exercises and the essay must be done in groups of two people. The student must respect the dates set for the practical tests and essay.

The average grade of the course is obtained as: 35% (grade of the first test) + 35% (grade of the second test) + 12% (grade of the essay) + 6%*(grade of the 1st exercise)+ 6%*(grade of the 2n exercise)+ 6%*(grade of the 3rd exercise) .

In order to pass the subject, any student should meet the following two:

1. the average grade of the subject is equal to or greater than 5 and,

2. The average grade obtained at the two partial exams is equal to or greater than 4.

Therefore:

• If a student meets the first requirement but not the second, he/she will have an average grade of the subject of 4.5 and will be attend the retake test, as explained below in the section "Retake process".

• If a student meets the second requirement but not the first, or doesn't meet any of them, he/she will obtain an average grade of the subject that arises from the direct application of the previous weightings, and will be able to attend the retake test (see "Retake process" below).

Calendar of evaluation activities

The dates of the evaluation activities (midterm exams, exercises in the classroom, essay) will be announced well in advance during the term. Due to unexpected events, these dates may be subject to changes. If this is the case, the changes will always be announced on the "virtual campus" since it is understood that this is the usual platform for exchanging information between the lecturer and the students. After all grading activities have ended, students will be informed of the date and way in which the course grades will be published. Students will be also be informed of the procedure, place, date and time of grade revision following University regulations.

Retake Process

"To be eligible to participate in the retake process, it is required for students to have been previously been evaluated for at least two thirds of the total evaluation activities of the subject." Section 3 of Article 112 ter. The recovery (UAB Academic Regulations). Additionally, it is required that the student to have achieved an average grade of the subject between 3 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 for the subject. If the student does not pass the retake, the grade will remain unchanged, and hence, student will fail the course.

No avaluables

Any student who has not attended any of the two written tests will be considered as '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).***

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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 reference will be provided for each topic

Software

Spreadsheet (Excel)