

Course title	<b>Air Transport Economics</b>
Level / Semester	2 <sup>nd</sup> term
Credits (ECTS)	
Professor(s)	Estelle Malavolti
Other teaching staff	
Teaching Hours CM	30h
Teaching Hours TD	
Teaching Hours TP	
Course Language	English
Language for TD and/or TP	

### **Presentation and organisation of the teaching staff:**

Estelle Malavolti (T684), email: [estelle.malavolti@tse-fr.eu](mailto:estelle.malavolti@tse-fr.eu), Office hours to be determined. Pr. Malavolti.

Christian Bontemps (T518), email: [christian.bontemps@tse-fr.eu](mailto:christian.bontemps@tse-fr.eu), Pr. Bontemps teaches the second part.

### **Objectives**

After the course, the students should be able to:

- Describe the current challenges in air transport,
- Choose relevant models of industrial organization to analyze the sector,
- Comment on the assumptions behind the models and the results, using their knowledge of the markets,
- Present and critique relevant research papers.

### **Course description**

After a presentation of the market and a strategic analysis of the sector, relevant models of Industrial Organization will be presented, based on research papers. Another part is devoted to the study of demand modeling and estimation in IO applied to the air transport industry.

A first part of the course is dedicated to the analysis of different IO models relevant for the sector. The main interest is to analyze the sector of the air transport and to propose relevant models to understand the main evolutions that could occur. For instance, we will work on how to answer to the question of modelling horizontal agreements such as code-sharing agreements between airlines. Another example is to know how models of cooptation could apply to the strategic interest for an airline of being partner in an alliance. The final objective of this part of the course is to be able to anticipate the evolution

of the competition and strategic interactions to a modification of the regulation and/or the intervention of a competition authority.

A second part of the course, given by Pr. C. Bontemps, will be devoted to the study of demand modeling in IO and entry models. Beyond academic careers, there are clear policy issues and commercial implications. In addition to the economics discipline, estimating demand, understanding product positioning, pricing and use of product information, merger analysis, reputation and the other topics that we cover are central concerns in the literatures on marketing, strategy and information systems. In this part, some particular attention is paid on the econometrics background and students should be able after these lectures to handle a complete empirical analysis on their favorite software.

The last part of the course consists into presentations by external professors and/or professionnals, whose research or work is applied to economics of air transport. Professor Niemeier (Hamburg University) will focus on Airport economics in the sector, Professor Marty (CNRS, University of Nice) will present competition policy issues, and Professor Martini (University of Bergamo) will be speaking of modeling the costs in the air transport sector.

The evaluation consists into a report on a research question/ project that can include an empirical part. It will be performed in groups.

This course is organized by faculty members from the French Civil Aviation University (Ecole Nationale de l'Aviation Civile).

### **Main References**

1. Aguirregabiria, V. and C. Ho, 2010, "A dynamic game of airline network competition: Hub-and-spoke networks and entry deterrence", *International Journal of Industrial Organization*, 28, 377-382.
2. Aguirregabiria, V., Mira, P., 2002, "Swapping the nested fixed point algorithm: a class of estimators for discrete Markov decision models", *Econometrica*, 70, 1519-1543.
3. Barla, P. and C. Constantatos, 2005, "Strategic interactions and airline network morphology under demand uncertainty", *European Economic Review*, 49, 703-716.
4. Basso, L.J., 2008, "Airport Deregulation: Effects on Pricing and Capacity", *International Journal of Industrial Organization*, 26, 1015-1031.
5. Berry, S., 1990, "Airport presence as product differentiation", *American Economic Review*, 80, 394-399.
6. Berry, S., 1992, "Estimation of a model of entry in the airline industry", *Econometrica*, 60, 889-917.
7. Berry, S., 1994, "Estimating discrete-choice models of product differentiation", *RAND Journal of Economics*, 25, 242-262.
8. Berry, S., Levinsohn, J., Pakes, A., 1995, "Automobile prices in market equilibrium", *Econometrica*, 63, 841-890.
9. Berry, S., Carnall, M., Spiller, P., 2006, "Airline hubs: costs, markups and the implications of customer heterogeneity", in: Lee, D. (Ed.), *Advances in Airline Economics. Vol. 1: Competition Policy and Antitrust*. Elsevier Press, Amsterdam, 183-214.
10. Berry, S., Jia, P., 2009, "Tracing the woes: an empirical analysis of the airline industry", *American Economic Journals Microeconomics*, 2, 1-43.
11. Bresnahan, T. and P. Reiss, 1990, "Entry in Monopoly Markets", *Review of Economic Studies*, 57, 531-553.

12. Borenstein, S., 1992, "The evolution of US airline competition", *Journal of Economic Perspectives*, 6, 45-73.
13. Borenstein, S., Rose, N., 2007, "How airline markets work...Or do they? Regulatory reform in the airline industry", NBER Working Paper #13452.
14. Ciliberto, F., Tamer, E., 2009, "Market structure and multiple equilibria in airline markets", *Econometrica*, 77, 1791-1828.
15. Brueckner, J., 2001, "Airport congestion when carriers have market power", *American Economic Review*, 92, 1357-1375.
16. Caminal, R. and Claiçy, 2007, "Are loyalty-rewarding pricing schemes anti-competitive", *International Journal of Industrial Organization*, 25, 657-674.
17. Dana, J.D., 1999, "Using Yield Management to Shift Demand When the Peak Time is Unknown", *RAND Journal of Economics*, 30, 456-464.
18. Dana, J.D., 1999b, "Equilibrium Price Dispersion under Demand Uncertainty: The Roles of Costly Capacity and Market Structure", *RAND Journal of Economics*, 30, 632-660.
19. Encaoua, D., A. Perrot and M. Moreaux, 1996, "Compatibility and Competition in Airline: Demand Side Network Effects", *International Journal of Industrial Organization*.
20. McFadden D. and K. Train, 2000, "Mixed MNL Models for Discrete Response", *Journal of Applied Econometrics*, 15, 447-470.
21. Nevo, A., 2000, "Mergers with Differentiated Products: the Case of the Ready-to-Eat Cereal Industry", *RAND Journal of Economics*, 31, 395-421.
22. Zhang A. and Y. Zhang, 2006, "Rivalry between strategic alliances", *International Journal of Industrial Organization*, 24, 287-301.