
Istanbul Technical University
Course: Aviation Economics and Financial Analysis
23--28 November 2015

Course Intent

This course will provide background in the micro and macro economics of the airline industry as well as cover the essentials of key topics in airline finance. The course concludes with an examination of airport economics.

The micro-economics will cover the basics of supply and demand. It will cover the differences in the economics of various carrier business models (full service network carriers, low cost carriers, ultra low cost carriers and charter operations). It will look at airline strategy models and tools to assess competitive advantage. It will discuss airline alliances and families, including co-owned major carriers (e.g., Lufthansa-Swiss-Austrian) and feeder carriers. With the emergence of carrier families and alliances, it is increasingly important to understand how competition authorities review proposed acquisitions and alliances. Airline strategies will be discussed including Porter's five forces model and students will develop a literacy in game theory and how to apply it to airline management and strategy development.

The macro-economics will cover points that are of considerable significance for a global airline where 'macro literacy is important'. This includes macroeconomic variables and measurement, money, inflation and monetary and interest rate policy, the drivers of exchange rates, business cycles and managing the airline and the importance of productivity growth.

Airline finance will cover the basic sources of funds for carriers, financial planning and financial analysis. We will cover airline cost classification, investment appraisal and risk management. Risk analysis to assess liquidity, profitability and solvency are also examined.

The daily lectures will be [approximately] organized according the the following schedule:

10:00-11:00 Morning Session 1
11:00-11:15 Break
11:15-12:15 Morning Session 2
12:15-12:30 Break
12:30-13:30 Morning Session 3
13:30-14:30 **Lunch**
14:30-15:30 Afternoon Session 1
15:30-15:45 Break
15:45-16:45 Afternoon Session 2
16:45-17:00 Break
17:00-18:00 Afternoon Session 3

This course will involve group work, something all of you are familiar with from your own work experience. The instructors will set up the composition of each group. When we do this we are looking to have gender and age balance, a mix and balance within each group of skills sets and to try to ensure group membership is not a bunch of familiar faces. We have learned that an important element of this program is that students meet people from other sections of THY that they would not have met otherwise. It also provides each group member with a set of different lenses on the problems and solutions.

Course Evaluation:

1. In class assignments – Day 3 & 4 (**20%**)-these will be handed in by groups not individually.
2. Case analysis – completed by each group, due December 5th – **30%**
3. Final Exam – to be written after the course is completed – **40%**
4. Class Participation: **10%**

Class participation grades are based upon the instructor's assessment of a student's contribution to class discussion, preparation for class, intelligent discussion and positive engagement with others in the class.

Course Instructors:

The course instructors include Dr. David Gillen and Dr. Tuba Toru Delibasi. Dr. Gillen has responsibility for the entire course and Dr. Gillen will be present on site for the entire course of study.

- Dr. David Gillen
YVR Professor of Transportation & Logistics
Director, centre for Transportation Studies
Sauder School of Business
University of British Columbia
PhD University of Toronto 1975
Faculty Experience: University of British Columbia 2004-present
University of California, Berkeley 1992-2000
Wilfrid Laurier University 1982-1991, 2001-2004
University of Alberta 1975-1982
Editor, Journal of Transport Economics & Policy, 2009-present
Associate Editor, Transportation Research E: Logistics & Transportation Review 1998-present
Faculty web page:
http://www.sauder.ubc.ca/Faculty/People/Faculty_Members/Gillen_David

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- Dr. Tuba Toru Delibasi
Ph.D. Economics, Toulouse School of Economics, France, 2013.
Assistant Professor, Economics and Logistics, Bahcesehir University (BAU),
2013-present
Visiting Fellow, Istanbul Technical University (ITU), 2014-present
Teaching Experience:
Bahcesehir University
Toulouse School of Economics
Toulouse 1 Capitole University
Graduate School of Management Institute of Business Administration
(IAE)
Research Experience:
BAU Center for Economics and Social Research (BETAM), 2013-present
University of Bristol, 2012
EUROCONTROL, 2007-2010
French Civil Aviation University, 2007-2010
<https://sites.google.com/site/tubatoru/>
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Course Outline

The following is an outline of course topics, content and instructors.

Day 1, Monday, November 23 – Professor David Gillen
Aviation Value Chain / Airline Financial Performance / Financial
Planning/Financial Analysis

Module 1 (1.5 hours) – Professor David Gillen
[Introduction: The Aviation Value Chain](#)

- The role of aviation
- The social rate of return to aviation
- The value chain in aviation
- Performance in the aviation value chain
 - Investment
 - Rate of return
 - Credit rating
- The emerging role of ancillary products/services
- The Role of Aviation in the Economy

Module 2 (2 hours) – Professor David Gillen
Financial Performance and Sources of Finance

Airline Finance

- Institutional framework
- Key issues in airline finance
- Global airline industry performance & Factors affecting airline performance
- Sources of finance
 - Debt and equity markets
 - Aircraft leasing
 - Aircraft securitization
 - Asset sale/leaseback
 - Aircraft manufactures / Component manufacturers
- Government funding – problem or a solution?

Module 3 (2 hours) – Professor David Gillen

Aspects of Airline Finance

- Airline Cost Classification
- Assessing performance
- Investment appraisal and financial evaluation
- Risk management (foreign currency / fuel price / etc.)

Module 4 (1.5 hours) – Professor David Gillen

Financial Analysis

- Airline financial statements
- Airline financial ratios
- Airline valuation
- Ratio Analysis – to assess liquidity, profitability and solvency

Day 2, Tuesday, November 24 – Dr. Tuba Toru Delibasi

Airline Demand & Supply/Airline Costs/Airline Business Models & Airline Pricing

Module 5 (2.5 hours) – Professor Tuba Toru Delibasi

Demand and Supply

- Main characteristics of supply in the airline industry
 - Perishability
 - Excess capacity
 - etc.
- Main characteristics of demand in the airline industry
 - Derived demand
 - Determinants of demand
 - Market demand segmentation

- Different classes/types of passengers
- Different classes/types of freight
- Demand elasticities

Module 6 (2 hours) – Professor Tuba Toru Delibasi

Airline Costs

- Cost classification (variable, fixed, total costs / short run vs long run costs)
- Cost relationships with distance, traffic levels, network size and scope
- Cost structure (fuel / labour / marketing & distribution / taxes / air navigation / airport fees)
- Economies of scale, scope and density

Module 7 (2 hours) – Professor Tuba Toru Delibasi

Airline Business Models / Airline Pricing

FSNCs, LCCs, ULCCs and Charter Carriers

- Economic characteristics of LCCs/FSNCs/ULCCs/Charter
- Cost structure of carrier types
- Market impact of LCCs/FSNCs
- Is there a really a difference between FSNCs and LCCs?
- Future of LCCs/FSNCs and evolution of business models

Day 3, Wednesday, November 25– Professor David Gillen

Airline Pricing / Airline Distribution Economics

Module 8 (2.5 hours) – Professor David Gillen

Pricing

- Revenue management: fares, buckets, restrictions, optimisation, network effects
- Load factors
- Break Even Load Factor Analysis
- The emerging merchandising approach: unbundling and rebundling, charging for value

Module 9 (2.5 hours) – Professor David Gillen

Distribution Economics

- Selling the airline product
- Travel agents (bricks and mortar and online)
- Tour operators and integrators
- Global Distribution Systems – economics for carriers
- Cargo distribution – freight forwarders
- New and Emerging Distribution Channels

Module 10 (2.0 hours) – Professor David Gillen

Business Strategy and Competitive Advantage

- Porter’s Five Forces Model
- Strengths & Weaknesses of the Analysis Framework
- Comparative Analysis Matrix and Core Competency Evaluation Matrix
- Applications – examples
- Student Exercise (**10 percent of final grade**) to be handed in by Groups.

Handing Out of Airline Strategy Case together with assignment questions: Final Team Report due Saturday, December 5th

Please Note: A PDF file that provides a presentation on case analysis has been uploaded to the course website Titled Module 10 Appendix

Day 4, Thursday, November 26 – Dr. Tuba Toru Delibasi

Airline Mergers and Alliances / Applications of Game Theory

Module 11 (2.5 hours) – Professor Tuba Toru Delibasi

Mergers and Alliances

Mergers

- Market consolidation (M&A trends)
- Factors explaining M&A activity
- Foreign ownership

Alliances

- Liberalization
- Global airline alliances
- Bilateral and multilateral airline alliances
 - Interlining
 - Marketing alliances
 - Codeshares
 - Price / capacity /schedule coordination
 - Metal neutral joint ventures

Economics of mergers and alliances

- Pro-competitive aspects of mergers/alliances
- Anti-competitive aspects of mergers/alliances

Module 12 (2.5 hours) – Professor Tuba Toru Delibasi

Applications of Game Theory to Assess Airline Strategies

- How Airlines Compete
- Baggage Fees: A Game Theoretic Analysis
- Game Theory and Aircraft Manufacturing
- Game Theory: Airbus vs Boeing

Module 13 (2 hours)

Class Exercise: How does Game Theory Help Airlines Make Additional Profits by Charging \$10 for early Boarding of a Flight (**10 percent of final grade**)

Day 5, Friday, November 27 – Professor David Gillen

Macroeconomics Measurement/inflation, Interest Rates & Monetary Policy/Exchange Rates/Business Cycles/Productivity Growth

Module 14 (2 hours)

Macroeconomic Literacy: Macroeconomics for Aviation Strategy & Management

- The basics – the airline (firm) and the economy
- Aggregation and Measurement
- The Macro System (micro components)
- Defining and Measuring Macro-Variables
- Prices, inflation & Real Quantities

Module 15 (2.5 hours)

Business Cycle and Economic Indicators

- Macroeconomic growth and Fluctuations
- Aggregate DD and SS Relationships
- Macroeconomic Policy
- Trade
- Balance of trade
- Comparative advantage
- Balance of Payments
- Exchange Rates (fixed and flexible)
- Purchasing Power Parity

Module 16 (2.5 hours)

International Indicators

- Cleaning up loose ends
- Nominal and Real Exchange Rates
- Business Cycles and GDP
- GNP and GDP

- Analyzing current accounts
- Okun's Law, Inflation, the Phillips Curve
- Yield Curves
- **Time to Work on Airline Strategy case**

Day 6, Saturday, November 28 – Professor David Gillen

Macroeconomics, Airport Economics and Case Analysis

Module 17 (2 hours)

Money, Interest Rates & Exchange Rates

- Money supply and determination of Interest Rates
- Foreign exchange rate market
- Open market operations under fixed and flexible exchange rates
- Joint determination of interest rates and exchange rates
- Effects of economic shocks

Module 18 (2 hours) – Professor David Gillen

Airport Economics

- The impact of infrastructure charges (airport and air navigation) and airline costs and competitiveness
 - Airline and airport taxes & charges, a comparison
- Pricing policies: what carriers have to pay
 - Residual pricing
 - Compensatory pricing
 - Funding agreements and efficiency
- Non-airside revenues
- Risk in the value chain
 - Airport vs airline markets
 - Comparing airport performance
 - Assessing role of ownership and regulation in affecting performance
- Slots and Capacity
- Regulatory schemes
- Future Trends

Module 19: Work on Case Study for submission December 5th.
