

Istanbul Technical University

Airport Planning and Management

March 2015

Course Intent

Airports provide the major infrastructure used in the provisions of commercial airline services. Globally, there are us\$300 billion invested in airport infrastructure, compared with \$550b invested by airlines and aircraft lessors. The facilities at an airport determine what types of aircraft an airline can operate. Airports are usually the largest single pieces of real estate in their urban region and they have many impacts on their communities. Thus airport planning is important not only for the airport, but also for their airline customers and their communities. Airlines must do business with the airport operating company at each station that it services. For Turkish Airlines, that means that in addition to its global hub at Istanbul Ataturk Airport, it will have business relationships with 260 other airports. While in the past, airports were thought of as government public utilities, today all airports are operated as businesses, with an increasing number of these businesses being private sector companies. This course is intended to give aviation managers an understanding of the airport business, how airports operate and key aspects of airport planning.

Course Instructors:

- Mike Tretheway
Dr. Tretheway has a PhD in Economics from the University of Wisconsin. He was a tenured faculty member of the Sauder School of Business, University of British Columbia, Canada from 1983-1996 and has been an Adjunct Professor since then. He was a Visiting Fellow, at the Australia Bureau of Transport Economics. He has lectured on airport management for Malaysian Airports Berhad airport management program, the Aena airport management program, Infraero airport management program, the International Aviation Management Training Institute and the International Air Transport Associate training program. From 1996-97 he was Vice President Marketing, Vancouver International Airport Authority. He is a co-Founder, InterVISTAS Consulting Inc. and his current position is Chief Economist and Chief Strategy Officer of the company.
- Amedeo Odoni
Dr. Odoni is Professor of Aeronautics and Astronautics and of Civil and Environmental Engineering at MIT. He has served as Co-Director of the Global Airline Industry Center at MIT (1999-2009) and the FAA's National Center of Excellence in Aviation Operations Research (1996-2002). He has more than 100 professional publications and 9 books to his credit, including the best-selling textbooks Airport Systems (co-authored with R. de Neufville) and The Global Airline Industry (co-edited with P. Belobaba and C. Barnhart). Dr. Odoni is an elected member of the U.S. National Academy of Engineering, a Fellow of INFORMS, and the recipient of several awards for his teaching and research. He has served as consultant to many of the busiest airports in the world.

- Joe Sulmona
Dr. Sulmona is an independent aviation consultant. He was Director of Airport Planning for the Vancouver International Airport Authority during the critical years when the first master plan was developed after privatisation. He was Director of Planning for InterVISTAS Consulting and followed this with a position as Planning Manager for the City of Coquitlam, Canada, one of Canada's fastest growing cities. In this role, he led development of the first Citywide Official Community Plan, together with the first Transportation Strategic Plan. These responsibilities involved planning for a rapid transit system to best serve the City's long-term urban development goals. Dr. Sulmona now provides training courses for both IATA and ACI in the areas of strategic management, transportation planning and commercial development.

Course Format

- This course is taught over 6 consecutive days, each with 7 hours of classes.
Classes begin at 10am and end at 6pm
there is one hour for lunch
Modules will have 15 minute breaks.
- Course language: English.
- Teaching level
 - This course is a course in a masters' degree
 - Students are assumed to have basic knowledge of the aviation industry and most have work experience with an airline, airport or other aviation related business.
 - The course will be taken after completion of the core of the Master's program.

Course Textbooks

- A list of readings is provided in a separate document.

Course Evaluation

- Students will be marked on a combination of an exam, a project and class participation.

Course Outline

Day 1

Module 1 (4 hours)

Introduction to the Airport Business

Dr. Tretheway

- “Introduction”
Anne Graham (2001)
Ch. 1 in *Managing Airports: An International Perspective*
pp. 1-8.
- Selected passages
R de Neufville and A Odoni (2013)
Chapter 1 in *Airport Systems: Planning, Design and Management: 2nd edition*,
McGraw Hill Education
pp. 3-5, 9-18.
- “Airports and their role in the value chain”
B. Koch and S. Budde (2005)
in W. Delfmann, H Baum, S Auerbach and S. Albers (editors)
Strategic Management in the Aviation Industry
Ashgate Publishing
pp. 379-381.
- *Selected readings*
Riga Doganis (1992)
The Airport Business,
pp. 7-10, 48-58.

Module 2 (2 hours)

The airline-airport relationship

Dr. Tretheway

- “The Airport – Airline Relationship”
Anne Graham (2001)
Ch. 5 in *Managing Airports: An International Perspective*
pp. 90-125.
- Passage on airline – airport use agreements and slot management
N. Halpern & A Graham (2013)
in *Airport Marketing*
pp. 196-203.

- Supplemental material
*!! You do not need to read this carefully.
It is provided as examples of airline-airport contracts*
AAAE Airport Agreement Guide, Volume 1
“Airport Use Agreement for Signatory Airline”
“Airport Use Agreement for Non-Signatory Airline”

Day 2

Module 3 (3 hours)

Regulation of Airports

Dr. Tretheway

- “Economic Regulatory Environment,”
N. Halpern & A Graham (2013)
in *Airport Marketing*
pp. 156-159.
- Selected passages
Airports Council International (2013)
The ACI guide to Economic Regulation
pp. 1, 2, 5-6, 10-11, 14-18, 22-25, 27-28, 32-35, 45-49, 68-69, 79-80.

Module 4 (4 hours)

Airport Marketing and Revenue Development

Dr. Tretheway

- “The Role of Airport Marketing”
Anne Graham (2001)
Excerpts from Ch. 7 in *Managing Airports: An International Perspective*
pp. 161-177
- “The ASD Process”
N. Halpern & A Graham (2013)
Section 4.3 in *Airport Marketing*
pp. 66-71.

Day 3

Module 5 (3 hours)

Airport Governance and Privatisation

Dr. Odoni

- “The changing nature of airports”
Anne Graham (2001)
Ch. 2 in *Managing Airports: An International Perspective*
pp. 9-52.
- “Airport Economics and Performance Benchmarks”
Anne Graham (2001)
Ch. 3 in *Managing Airports: An International Perspective*
pp. 53-70

Module 6 (2 hours)
Airport Operations

Dr. Sulmona

- Excerpts from
N Ashford, M Stanton & C Moore (1997)
Airport Operations
McGraw Hill, pp. 1-18, 29-46

Module 7 (2 hours)
Security and Facilitation

Dr. Sulmona

- “Facilitation and Airport Services”
Airports Council International (Nov. 2009)
ch.36 in *ACI Policy and Recommended Practices Handbook*

Day 4

Module 8 (2 hours)
Financing Airport Development

Dr. Odoni

- “Organisation and Financing”
de Neufville, R. and A. Odoni (2013)
chapter 7 in *Airport Systems: Planning, Design and Management, 2nd Edition*,
McGraw-Hill Education
- “User Charges”
de Neufville, R. and A. Odoni (2013)
chapter 8 in *Airport Systems: Planning, Design and Management, 2nd Edition*,
McGraw-Hill Education

- Innovative Finance and Alternative Sources of Revenue for Airports
ACRP – Airport Cooperative Research Program (2007),
Transportation Research Board, Washington, DC

Module 9 (2 hours)**Airport Terminal Rentals and Concessions**

Dr. Sulmona

- “The provision of commercial facilities”
Anne Graham (2001)
Ch. 6 in *Managing Airports: An International Perspective*
pp. 126-144

Module 10(2 hours)**Land Development**

Dr. Sulmona

- Same reading as module 9

Day 5

Module 11 (3 hours)**The Master Plan Process**

Dr. Sulmona

- “The process of preparing Master Plan Studies”
U.S. Federal Aviation Administration (2005)
Advisory Circular 150-5070-6B

Module 12 (5 hours)**Capacity Management, Congestion and Slots**

Dr. Odoni

- “Airfield Capacity”
de Neufville, R. and A. Odoni (2013)
chapter 10 in *Airport Systems: Planning, Design and Management, 2nd Edition*,
McGraw-Hill Education

- “Airfield Delay ”
de Neufville, R. and A. Odoni (2013)
chapter 11 in *Airport Systems: Planning, Design and Management, 2nd Edition*,
McGraw-Hill Education
- “Demand Management”
de Neufville, R. and A. Odoni (2013)
chapter 12 in *Airport Systems: Planning, Design and Management, 2nd Edition*,
McGraw-Hill Education
- “Detailed Design of Passenger Buildings”
de Neufville, R. and A. Odoni (2013)
chapter 16 in *Airport Systems: Planning, Design and Management, 2nd Edition*,
McGraw-Hill Education
- Airport Passenger Terminal Planning
ACRP – Airport Cooperative Research Program (2007),
Report 25 vol. 1
Transportation Research Board, Washington, DC.
pp. 43-47, 276-297
- Airport Passenger Terminal Planning
ACRP – Airport Cooperative Research Program (2007),
Report 25 vol. 2
Transportation Research Board, Washington, DC.
pp. 23-27

Day 6

Module 13 (3 hours)

Ground Access and Distribution

Dr. Odoni

- “Ground Access and Distribution”
de Neufville, R. and A. Odoni (2013)
chapter 17 in *Airport Systems: Planning, Design and Management, 2nd Edition*,
McGraw-Hill Education

Module 14 (3 hours)

Airport Environmental Planning & Management

Dr. Sulmona

- “Airports and the Environment”
Airports Council International (Nov. 2009)
ch. 6 in *ACI Policy and Recommended Practices Handbook*