

ISTANBUL TECHNICAL UNIVERSITY  
Aviation Institute: Executive M.Sc. Air Transport Management

**Course: Logistics Management in Air Transportation**

June 9-15, 2014

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**COURSE MAJOR TOPICS**

- Supply Chain Strategy
  - Customer Service Goals
    - Packaging, pricing and incentives
    - Defining service levels and links to inventory
    - Order processing design
  - Transportation & Logistics Strategy
    - Market structure for services
    - Cost characteristics
    - Pricing and rate structures
    - Consolidation
    - Modal Choice-the tradeoffs
  - Inventory Management
    - Forecasting
    - Types of inventories-push and pull
    - Deterministic and stochastic demand models
    - Single period vs multi-period
  - Process analysis
    - Flow time, flow rate and Little's Law
    - Capacity analysis
    - Factor substitution
  - Queuing systems
    - Bottlenecks
    - Different queuing models (e.g., single vs multi-servers)
  - Forecasting and Risk Management
    - Forecasting methods
    - Time series decomposition
    - Regression techniques
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DATE	PERIOD	CLASS TOPICS/Text Chapters	CONTENT / ACTIVITIES
<b>June 9 Monday</b>	<b>AM</b>	Introduction; The process view of the organization, process design and linkages to Strategy	C&T: 1,2
	<b>PM</b>	Understanding the supply process and process capacity;	C&T: 3 Case "Kristen's Cookie Company"
<b>June 10 Tuesday</b>	<b>AM</b>	Process Design, Link operations & finance	C&T: 6
	<b>PM</b>	The link between operations and finance: Estimating and reducing operating costs; examples from airline industry	C&T: 5 & 6 Problem Set 1
<b>June 11 Wednesday</b>	<b>AM</b>	Variability and queuing	C&T: 8, 9 Problem Set 1, hand-in and solutions provided
	<b>PM</b>	Variability and queuing	C&T: 8,9 Case "Preferred Customer Service at USAirways" Handed Out Problem Set 2
<b>June 12 Thursday</b>	<b>AM</b>	The newsvendor model; Inventory management	C&T: 12, '16' Problem Set 2 hand-in and solutions provided
	<b>PM</b>	Revenue Management, Excel Exercises	C&T: 16, Excel simulation Case "Preferred Customer Service at USAirways" – exercise period Problem Set 3
<b>June 13 Friday</b>	<b>AM</b>	Forecasting & Managing Risk	C&T: 15; B: Problem Set 3 hand-in and solutions provided Forecasting Problem; data and questions
	<b>PM</b>	Supply chain coordination	C&T: 17; SCM game; Excel simulation Case "Preferred Customer Service at USAirways" – exercise period
<b>June 14 Saturday</b>	<b>AM</b>	Transportation & Logistics strategy (costs, pricing, rate profiles)	Problem Set 4 hand-in and solutions provided tomorrow. To be submitted to Course RAs
	<b>PM</b>	Total Supply Chain Cost Model and Tradeoffs	Notes provided Complete Solution to Case "Preferred Customer Service at USAirways" Hand in and Discussed

## Videos

The Youtube videos listed below are a good general introduction to the issues that we will study. The videos are not required viewing (meaning they are not testable material on an exam) however, students may find them helpful.

1. Why Soap.com & Diapers.com Are Changing the Rules on Overnight Shipping  
[http://www.youtube.com/watch?v=6zXOW6v0c8s&feature=player\\_embedded](http://www.youtube.com/watch?v=6zXOW6v0c8s&feature=player_embedded)
  2. What is Supply Chain Management  
<http://www.youtube.com/watch?v=MilQBxVjZAw&feature=relmfu>
  3. Buying Managing Supply  
[http://www.youtube.com/watch?v=zYbtZ0x9\\_SA&feature=relmfu](http://www.youtube.com/watch?v=zYbtZ0x9_SA&feature=relmfu)
  4. Make it: Manufacturing and Operations  
<http://www.youtube.com/watch?v=ncli94xodm8&feature=relmfu>
  5. Move It: Transportation & Logistics  
<http://www.youtube.com/watch?v=-ZpHiMTwOdM&feature=relmfu>
  6. Sell it & Service It: Retail Considerations <http://www.youtube.com/watch?v=ZUO2EaJnb-w&feature=relmfu>
  7. Supply Chain Integration:  
[http://www.youtube.com/watch?v=S\\_yMW2b0kNk&feature=relmfu](http://www.youtube.com/watch?v=S_yMW2b0kNk&feature=relmfu)
  8. Global Supply Chains:  
<http://www.youtube.com/watch?v=ZuQ200JAViA&feature=relmfu>
  9. Socially Responsible Supply:  
<http://www.youtube.com/watch?v=VdbKvXh6sLU&feature=relmfu>
  10. Business Processes:  
<http://www.youtube.com/watch?v=JUInjQvzIkE&feature=relmfu>
  11. Measuring Performance:  
<http://www.youtube.com/watch?v=R4HPYR5iLw&feature=relmfu>
  12. Quality Management:  
[http://www.youtube.com/watch?v=QJNVrY\\_Z2NM&feature=relmfu](http://www.youtube.com/watch?v=QJNVrY_Z2NM&feature=relmfu)
  13. Supply Chains and Information:  
<http://www.youtube.com/watch?v=SXDvHgjRNDQ&feature=relmfu>
  14. Robotics in Warehouses  
<http://www.youtube.com/watch?v=gvQKGev56qU&feature=related>
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