Learning Objectives:

The student will know the following terminology:

- Airline Pricing and O-D Markets
  - Pricing
    - Regulated Pricing
    - “Deregulated” or Liberalized Pricing
  - Revenue Management
  - Theoretical Pricing Strategies
    - Cost-Based Pricing
    - Demand Based Pricing
    - Service Based Pricing
  - Price Discrimination vs. Product Differentiation
    - Price Discrimination
    - Product Differentiation
      - “Willingness to Pay” (WTP)
      - Differential Pricing Model
- Airline Differential Pricing / Market Segmentation
  - First Class, Business Class, and Economy
  - Restrictions on Lower Fares
    - Advance Purchase, Minimum stay, cancellation fees and change fees
    - Saturday night stay condition most effective
    - Disutility
  - Simplified Fare structures
  - Impacts on Differential Pricing Model
- Airline Revenue Management (RM)
  - Differential Pricing
  - Yield Management
  - Computerized RM Systems
    - 3rd Generation RM System
  - Revenue Management Techniques
    - Overbooking
      - Physical Capacity (CAP) - Actual # of seats on the flight, usually maximum capacity of the aircraft
      - Authorized Capacity (AU) - Maximum # of bookings that an airline is willing to accept
      - Confirmed Bookings (BKD) - BKD <= AU - Total # of passenger reservations that have been accepted
      - No Show Rate (NSR) - Mean % of passengers with confirmed bookings that do not show up
      - Denied Boarding’s (DB)
      - Spoilage (SP)
      - Show up Rate (SUR)
      - Waitlisted passengers (WL)
• Go-show passengers (GS)
• Stand-by passengers (SB)
• No-shows (NS)
• Show-ups (SU)
• Passengers Boarded (PAX)
• Voluntary DB (VOLDB)
• Overbooking Models
  o Mathematical overbooking problem, Find OV > 1.00 such that
    AU = CAP * OV
  o Manual/Judgmental Approach, AU = 100*OV = 100*(1+NSR)
  o Deterministic Model, AU = CAP/(1-NSR)
  o Probabilistic/Risk Model,
    AU = CAP/((1-NSR) + 1.645 STD)
• Fare Class Mix (Flight leg Optimization)
  • Partitioned vs. Serial Nesting
• Traffic Flow (O-D) Control (Network Optimization)
  • “fare class control”:
    o High-yield (“full”) fare types in top booking classes
    o Lower yield (“discount”) fares in lower classes
  • Yield-Based Fare Class Structure
  • The O-D Control Mechanism
    o Revenue value buckets (“greedy approach”)
    o EMSR heuristic bid price
    o Displacement adjusted virtual nesting
    o Network “optimal” bid price control

The student will be able to perform the following analysis (i.e. problems):

• Discuss Airline Pricing Strategies
• Discuss Airline Differential Pricing Methods
  o Impacts on Differential Pricing Model
• Discuss Airline Revenue Management Techniques
  o Overbooking Models
    o Fare Class Mix (Flight leg Optimization)
    o Traffic Flow (O-D) Control (Network Optimization)
• Identify from Diagram
  o Different components of Computerized RM Systems
• Calculate
  o Authorized Capacity (AU) for different Overbooking Models
  o Revenue from the Differential Pricing Model