



Broward Community College

Course Outline

STATUS: A

COMMON COURSE NUMBER: AVM 2410

COURSE TITLE: Airport Management

CREDIT HOURS: 3

CONTACT HOURS BREAKDOWN:

Lecture/Discussion 48

Lab

Other

Contact Hours/Week 3

CATALOG COURSE DESCRIPTION:

Prerequisite: None

Corequisite: None

Provides a comprehensive examination of the major functions of managing an airport, and the concepts underlying airport planning and construction. The controlling factors in the development of an airport such as size and forecasting volumes, design considerations including runways configurations, site location requirements, master planning and zoning laws will be examined. The socioeconomic effect of airports on the communities they serve will be explored.

General Education Requirements - Associate of Arts Degree, meets Area(s):
 General Education Requirements - Associate in Science Degree, meets Area(s):

UNIT TITLES: (OVER, PLEASE)

UNIT TITLES:

1. The Airport-Airway System
2. The Airport System
3. Airport System Planning
4. Airport Requirements and Site Selection
5. Airport Layout and Land Use Plans
6. Terminal Area and Airport Access Plans
7. Financial Planning
8. Airport Capacity and Delay
9. Air site Technological Improvements
10. Landsite Technological Improvements
11. Financial Management
12. Organization and Administration
13. Airport Operations
14. Airport Relations with Tenants and the Public

I. Course Overview:

Upon successful completion of this course, the students should be able to demonstrate an understanding of the major functions of managing an airport and the concepts underlying airport planning and construction.

II. Units:

Unit 1. The Airport-Airway System

General Outcome:

- 1.0 The students should be able to understand the historical development of airports in the United States.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 1.1 Recognize the importance of Post Office Department in establishing the early airmail routes.
- 1.2 Discuss the significance of the Kelly Act of 1925; the Air Commerce Act of 1926.
- 1.3 Explain how the Bureau of Air Commerce was established.
- 1.4 Describe the purpose of the Civil Aeronautics Act of 1938.
- 1.5 Explain how the Civil Aeronautics Administration was established.
- 1.6 Summarize the role of the federal government in providing airport aid during World War II.
- 1.7 Highlight several of the important recommendations made by a select committee in 1944 which led to the Federal Airport Act of 1946.
- 1.8 Describe the events leading up to passage of the Federal Aviation Act of 1958.

- 1.9 Explain the role of the Department of Transportation.
- 1.10 Distinguish between the Airport and Airway Development Act of 1970 and the Airport and Airway Revenue Act of 1970.
- 1.11 Discuss some of the important amendments under the Airport and Airway Development Act of 1976.
- 1.12 Give an assessment of Federal Airport Policy from pre-World War I days through the mid 1980s.

Unit 2. The Airport System

General Outcome:

2.0 The students should be able to describe the classification of airports and their economic role as well as current issues facing the airport systems.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 2.1 Recognize the size and scope of the airport system in the United States.
- 2.2 Explain the FAA method of classifying airports.
- 2.3 Discuss the economic role of airports.
- 2.4 Summarize several major current issues in airport system development.
- 2.5 Identify ten prominent airport information sources and briefly describe their primary function.

Unit 3. Airport System Planning

General Outcome:

- 3.0 The students should be able to discuss the importance of integrating airport planning from the federal, state and local levels to develop the airport system.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 3.1 Discuss the importance of airport system planning.
- 3.2 Describe the purpose and some criticisms of the NASP.
- 3.3 Describe the purpose and define the "Levels of Need" under NASP.
- 3.4 Distinguish between regional and state airport planning.
- 3.5 Describe the purpose and some criticisms of the SASP.
- 3.6 Explain what is meant by "Integrated Airport System Planning" as described in the NPIAS.
- 3.7 List the major objectives of an airport master plan.
- 3.8 Explain the importance of local coordination in airport system planning.
- 3.9 Discuss the need for integration among airport system plans at the national, regional, state, and local levels.

Unit 4. Airport Requirements and Site Selection

General Outcome:

- 4.0 The students should be able to recognize the critical elements that go into the first phase of the Master planning process at an airport including forecasting, demand/capacity analysis and site selection.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 4.1 Define airport master plan and recognize the major components of the first and second phase.
- 4.2 Describe the five major factors included in the Inventories stage.
- 4.3 Explain how public hearings can assist the airport sponsor in developing an airport master plan.
- 4.4 Identify the three basic types of forecasting methods used by airport planners.
- 4.5 List the five operational activity forecasts needed by airport planners.
- 4.6 Discuss the purpose of the demand/capacity analysis stage.
- 4.7 Highlight the major environmental concerns of airport planners.
- 4.8 List the ten factors that must be considered by airport planners in preparing an environmental impact statement.
- 4.9 Discuss the major factors that must be given careful analysis in the evaluation of airport sites.

Unit 5. Airport Layout and Land Use Plans

General Outcome:

5.0 The students should be able to understand the airport layout and land use plans in the Master planning process.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 5.1 Describe the major items included in an airport layout plan drawing.
- 5.2 Identify the prominent airside facilities.
- 5.3 Describe the four basic runway configurations.
- 5.4 Highlight the importance of prevailing wind in planning runways.
- 5.5 Distinguish between the following runway classifications: visual, nonprecision instrument, and precision instrument.
- 5.6 Demonstrate an understanding of the importance of runway lighting and ILS systems.
- 5.7 Describe the basic principles involved in laying out taxiways.
- 5.8 Distinguish between holding areas and holding bays.
- 5.9 Describe the four basic aircraft parking positions.
- 5.10 Explain each of the so-called imaginary surfaces described in FAR Part 77.
- 5.11 Discuss the importance of land use planning on and off the airport.

Unit 6. Terminal Area and Airport Access Plans

General Outcome:

6.0 The students should be able to describe the elements that go into terminal area and airport access plans.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 6.1 Define "terminal area."
- 6.2 Describe the primary objective of the terminal area plans.
- 6.3 Discuss some of the factors taken into consideration by airport planners in selecting a terminal area concept.
- 6.4 Summarize the advantages and disadvantages of the centralized and decentralized passenger processing systems.
- 6.5 Distinguish between the four terminal building design concepts.
- 6.6 Explain what is meant by the passenger handling system and identify the processing links.
- 6.7 List some of the terminal building facilities occupied by airport operations and management, airline operations, and government agencies.
- 6.8 Describe the flow of domestic, international, and transfer passengers through the terminal.
- 6.9 Define "general concept evaluation" and "criteria for design and development."
- 6.10 Identify the steps involved in determining space requirements.
- 6.11 Describe the purpose of the airport access plans.

Unit 7. Financial Planning

General Outcome:

- 7.0 The students should be able to understand the major components that go into the overall operating and capital expenditure programs including revenue sources.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 7.1 Describe the purpose of the financial plan.
- 7.2 Define "break-even need" and how it relates to the economic evaluation of the fourth phase of the master plan.
- 7.3 Distinguish between non-depreciable and depreciable investment.
- 7.4 List and briefly describe five (5) potential airport revenue sources.
- 7.5 Distinguish between general obligation bonds, self-liquidating general obligation bonds, and revenue bonds as alternate financing methods.
- 7.6 Summarize the market for airport bonds in recent years.
- 7.7 Describe the competitiveness of airport bonds from the standpoint of bond ratings, interest costs, and defaults.

Unit 8. Airport Capacity and Delay

General Outcome:

- 8.0 The students should be able to understand the factors that affect capacity and delay at our major hub airports.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 8.1 Understand the relationship between capacity, demand, and delay.
- 8.2 Describe the factors affecting capacity and delay.
- 8.3 Discuss the methods of measuring delay.
- 8.4 Compare the "administrative management" and "demand management" approaches to reducing delay.
- 8.5 Summarize five administrative management approaches to controlling demand.
- 8.6 Describe how demand management relies on the price mechanism in determining airport access.
- 8.7 Discuss some of the factors affecting the use of demand management alternatives.

Unit 9. Airside Technological Improvements

General Outcome:

- 9.0 The students should be able to describe current airside technological improvements designed to alleviate capacity and delay problems.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 9.1 Discuss several technological advances which are designed to improve air traffic guidance and surveillance.
- 9.2 Describe the following ATC systems: Traffic Management System (TMS) and Advanced En Route Automation (AERA) program.
- 9.3 Distinguish between the following airspace uses procedures as a means of improving traffic flow: reduced lateral separation reduced longitudinal separation on final approach, and separate short runways for small aircraft.
- 9.4 Define "wake vortex" and "wind shear".
- 9.5 Give several examples of weather-related technologies designed to improve traffic flow.
- 9.6 Discuss the various approaches used by the FAA and airport management to reduce noise.
- 9.7 Give several examples of ground surveillance and control technologies designed to improve airport surface utilization.

Unit 10. Landside Technological Improvements

General Outcome:

10.0 The students should be able to describe current landside technological improvements designed to alleviate capacity and delay problems.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 10.1 Describe several technologies designed to improve passenger movement through the terminal.
- 10.2 Define "computerized ticket systems" and "computerized aircraft manifest."
- 10.3 List three ways to expedite the baggage handling process.
- 10.4 Explain how the Federal Inspection Service (FIS) is improving the process of clearing passengers and cargo through Customs, Immigration, and Agriculture.
- 10.5 Discuss several management techniques designed to improve landside access.
- 10.6 Describe the pros and cons of rail transit as a solution to the airport access problem.

Unit 11. Financial Management

General Outcome:

11.0 The students should be able to understand airport accounting systems and methods of financial management at commercial airports including pricing of airport facilities and services.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 11.1 Discuss the importance of accounting to airport financial management.
- 11.2 Summarize the five major revenue sources under a typical airport's operating statement.
- 11.3 Explain why it is so difficult to compare operating expenses between different airports.
- 11.4 Discuss the importance of planning and budgeting in the financial management process.
- 11.5 Distinguish between the residual-cost and compensatory approaches on airport-airline relationships.
- 11.6 Define "majority-in-interest" and describe its implication for residual-cost airports.
- 11.7 Describe the major sources of revenue for the airfield area, terminal area concessions, airline leased areas, and other leased areas.
- 11.8 Discuss some of the effects of deregulation on airport financial management.

Unit 12 Organization and Administration

General Outcome:

12.0 The students should be able to discuss a typical airport organizational structure including functions performed by operational and management personnel.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 12.1 Describe the five types of public airport ownership and operation in the United States.
- 12.2 Explain the purpose of an organization chart.
- 12.3 Summarize the major responsibility and discuss the principal duties of the following positions: airport director, assistant director-finance and administration, assistant director - operations, and assistant director - maintenance.
- 12.4 Identify at least ten other positions found at a commercial airport.
- 12.5 Discuss the educational and training requirements for an individual considering a career in airport management.
- 12.6 Explain the importance of airport public relations.
- 12.7 List the primary objectives of an airport public relations campaign.

Unit 13. Airport Operations

General Outcome:

13.0 The students should be able to understand various airport operation functions including pavement maintenance, snow removal, crash, fire and rescue and safety.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

13.1 Describe some of the maintenance problems with asphalt and concrete runways.

13.2 Define vibratory testing.

13.3 Describe how runway grooving helps reduce hydroplaning.

13.4 Identify the three basic methods of removing rubber deposits and other contaminants from runways.

13.5 Describe the major items included in a snow removal program.

13.6 Describe how the three basic mechanical methods of snow removal are used.

13.7 Identify four or five areas of concern under the following headings in an airport safety self-inspection program: ramp/apron, runways, taxiways, fueling facilities, and buildings.

13.8 Discuss several approaches to eliminating bird hazards.

13.9 Describe the minimum CFR requirements under FAR Part 139.

13.10 List the basic requirements under FAR Part 107.

13.11 Describe some of the major ground servicing its equipment found at major airports.

Unit 14. Airport Relations with Tenants and the Public

General Outcome:

14.0 The students should be able to identify the major external and internal constituents that interface with airport management and the role of public relations.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

14.1 Describe how airport-airline relations concerning use agreements have changed since deregulation.

14.2 Describe a typical airport-concessionaire agreement.

14.3 Discuss some of the liability exposures which an airport experiences.

14.4 Summarize the coverage afforded under an airport premises liability policy.

14.5 Highlight the FAA's role in noise abatement.

14.6 Discuss some of the problems of noise as it relates to land use around the airport.

14.7 Identify the noise abatement programs eligible for federal aid.

14.8 Describe some of the restrictions imposed upon aircraft operators to control noise.

Special Student Projects:

1. Each student must write a term report covering some problem related area facing airport management.
2. Each student must participate in a field trip to the following airports: Miami International, Fort Lauderdale-Hollywood International and Executive Airport.