

July 2006

**CURRICULUM FRAMEWORK**  
Florida Department of Education

Program Title: AVIATION ADMINISTRATION  
Occupational Area: Industrial Education

PSAV

CIP Number 1649010402  
Grade Level College Credits  
Length AS Degree - 64 Hours  
SOC 53-2022

- I. MAJOR CONCEPTS/CONTENT:** The purpose of this program is to prepare students who are seeking employment in the aviation/airline/airport fields. Some of the students will be able to obtain opportunities in the federal, state and local government aviation fields, while others will find opportunities in airline fields, such as initial entry level jobs in customer service and operations and air cargo as well as lower to middle level management positions. Others will find positions in supporting aviation entities, such as suppliers and service providers to airlines and government aviation agencies.

Content should include, but not be limited to, communication skills, leadership skills, directing, planning and controlling, human relations and employability skills, safe and efficient work practices, technical skills such as aircraft and ground equipment operations and terminology, records management, security issues, Federal Aviation Regulations, and air cargo processes and practices.

- II. LABORATORY ACTIVITIES:** Laboratory activities are a part of this program in that practical applications and exposure to industry practices are emphasized. These activities, along with the

classroom instruction, provide for the development and reinforcement of skills in human relations, airport/facility management, airline operations, management/marketing, customer service, air traffic control, and air cargo.

Consideration should be given to offering an internship or cooperative work experience for those students who are not already working in the aviation industry, or who wish to gain experience in their chosen future career paths, such as air traffic control, airport management, aviation law, airline operations, management/marketing, aviation customer service or air cargo. Operating knowledge of the following tools and equipment/functions should be offered:

Airport facility equipment, /ground equipment; aircraft operating requirements/limitations, navigational equipment, aviation weather reports and conditions, air traffic control equipment/procedures; customer service information technology tools and air cargo ground handling equipment and procedures.

Whenever the cooperative or internship method of instruction is offered the following is required for each student: a training plan, signed by the student, teacher and employer which includes instructional objectives and a list of on-the-job and in-school learning experiences; a work environment which reflects equipment, skills and tasks relevant to the occupation the student has chosen as a career goal. The student must receive compensation for a cooperative experience, but not for an internship that is arranged by the college.

**III. SPECIAL NOTE:** The American Association of Airport Executives (AAAE); The Air Transportation Association (ATA); International Air Transport Association (IATA); The US Department of Transportation (USDOT); The Federal Aviation Administration (FAA); The Transportation Security Administration; The National Transportation Safety Board (NTSB); National Association of Aviation Officials (NASAO); and Florida

Department of Transportation -Aviation Office are the appropriate organizations for providing leadership training and reinforcing specific skills.

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Division of Community Colleges  
STUDENT PERFORMANCE STANDARDS

Program Title: AVIATION ADMINISTRATION  
Secondary Number  
Postsecondary number AS Degree

**IV. INTENDED OUTCOMES:** After successfully completing the program, the student will be able to:

- 01.0 Demonstrate an understanding of basic aviation terminology and history.
- 02.0 Demonstrate appropriate math skills.
- 03.0 Demonstrate appropriate communications/English skills.
- 04.0 Demonstrate an understanding of aviation operations practices, limitations and procedures.
- 05.0 Demonstrate an understanding of federal, state and other governmental laws, rules and policies as they relate to aviation.
- 06.0 Demonstrate an understanding of airline and airport management practices, including leadership, communications, directing, planning and controlling.
- 07.0 Demonstrate an understanding of aviation security issues and responses.
- 08.0 Demonstrate an understanding of aviation/airline marketing, customer service/sales distribution/and reservations/ticketing.
- 09.0 Demonstrate an understanding of aero meteorology and basic science/aerodynamics knowledge.
- 10.0 Demonstrate an understanding of aviation safety and human factors, including accident prevention.
- 11.0 Demonstrate an understanding of air traffic control procedures and policies.
- 12.0 Demonstrate an understanding of air cargo operations and procedures.
- 13.0 Demonstrate employability skills.
- 14.0 Demonstrate an understanding of entrepreneurship.

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- 01.0 **DEMONSTRATE AN UNDERSTANDING OF BASIC AVIATION TERMINOLOGY AND HISTORY**--The student will be able to:
- 01.01 Explain the overall scope and breadth of the aviation industry including its impact on the economy.
  - 01.02 Distinguish the terms and vocabularies that are used in the Aerospace and Commercial Aviation Industry.
  - 01.03 Describe the history of technological, governmental, social and economic developments of aviation.
  - 01.04 Explain the different types and categories of aircraft in use in the industry by distinguishing and identifying: Various wide body, narrow body types and general aviation aircraft.
  - 01.05 Demonstrate an understanding of the oversight role of the Federal Government and its effect on the aviation industry.
- 02.0 **DEMONSTRATE APPROPRIATE MATH SKILLS**--The student will be able to:
- 02.01 Solve problems for volume, weight, area circumference and perimeter measurements for rectangles, squares, and cylinders.
  - 02.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.

- 02.03 Add, subtract, multiply and divide using fractions, decimals and whole numbers.
- 02.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
- 02.05 Demonstrate an understanding of federal, state and local taxes and their computation.

03.0 **DEMONSTRATE APPROPRIATE COMMUNICATION/ENGLISH SKILLS--**

The student will be able to:

- 03.01 Write logical and understandable statements, or phrases, to complete with accuracy the forms/invoices commonly used in business and industry.
- 03.02 Read and understand graphs, charts, diagrams and tables commonly used in this industry/occupational area.
- 03.03 Read and follow written and oral instructions.
- 03.04 Answer and ask questions coherently and concisely.
- 03.05 Read critically by recognizing assumptions and implications and by evaluating ideas.
- 03.06 Demonstrate appropriate telephone/communications skills.

04.0 **DEMONSTRATE AN UNDERSTANDING OF AVIATION OPERATIONS PRACTICES, LIMITATIONS AND PROCEDURES--**

The student will be able to:

- 04.01 Demonstrate knowledge of aircraft systems as they apply to flight operations, including engines, fuel, electrical, hydraulics, pneumatics, flight controls and avionics.
- 04.02 Understand the various factors of aircraft performance, including takeoff, enroute and landing limitations and weight and balance.
- 04.03 Demonstrate knowledge of the function of flight operations, including pilot hiring, training, standards, safety issues, security issues, FAA and TSA regulations, documentation requirements, operations specifications, and crew scheduling

as well as flight attendant and dispatcher requirements.

- 04.05 Describe how airline maintenance operates and its role and effect on flight operations, with both scheduled and non-scheduled maintenance.
- 04.06 Demonstrate an understanding of the role of the flight operations professional in the economic and planning functions of an airline.
- 04.07 Explain FAA requirements such as flight standards, types of certificates, training and record keeping, surveillance and investigations as well as the operator's response and its relationship with the FAA.
- 04.08 Describe the role of the National Transportation Safety Board in accident investigation as well as NASA's role in aviation safety reporting systems and research.
- 04.09 Demonstrate knowledge of the application of information technology systems in flight operations as they relate to flight planning systems, flight management systems, satellite communication and navigation systems, weight and balance, cockpit displays and automation, maintenance monitoring and management information systems.

**05.0 DEMONSTRATE AN UNDERSTANDING OF FEDERAL, STATE AND OTHER GOVERNMENTAL LAWS, RULES AND POLICIES AS THEY RELATE TO AVIATION**--The student will be able to:

- 05.01 Demonstrate knowledge of the history and foundations of the legal system in the United States and the historical development of aviation law.
- 05.02 Describe the state and federal system of trial, appellate and supreme courts as well as subject matter jurisdiction.
- 05.03 Distinguish the role and function of the US Department of Transportation, Federal Aviation Administration, Transport Security Administration and the National Transportation Safety Board as it relates to their legal responsibilities and the federal statutes that give them their authority as well as the process of creating and enforcing applicable regulations.

- 05.04 Demonstrate a knowledge of airman rights and responsibilities, including negligence, FAA enforcement, immunity, and degrees of care.
- 05.05 Explain state aviation law, relating to airports, fixed based operators, aircraft sales, registration and taxation issues.
- 05.06 Understand the legal issues relating to the aircraft manufacturing and the airline industry, including warranties, products liability, negligence, accident litigation, consumer issues and labor issues.
- 06.07 Demonstrate knowledge of international air law, including the Warsaw Convention, the Chicago Convention, bilateral and multilateral agreements, the International Civil Aviation Organization, and the International Air Transport Association as well as issues of international jurisdiction, limits of liability and damages.
- 05.08 Understand the legal issues that relate to aviation security issues, including hijacking and bomb threats.

06.0 DEMONSTRATE AN UNDERSTANDING OF AIRLINE AND AIRPORT MANAGEMENT PRACTICES, INCLUDING LEADERSHIP, COMMUNICATIONS, DIRECTING, PLANNING AND CONTROLLING--

The student will be able to:

- 06.01 Understand the historical aspects of the science of management as it has developed in the U.S. including how the changing economy and technology affected the development of management techniques.
- 06.02 Describe the various environments that airline and airport management have to deal with in evaluating what factors will affect their organization, such as changes in competition, economics, social factors, government policies and technology.
- 06.03 Describe the various philosophies of organizational design and how this applies to the airlines and airports. This will include: Pyramidal structures, matrix structures and amorphic project type structures.
- 06.04 Demonstrate an understanding of the various functional areas of an airline. This will include: Flight Operations, Maintenance, Customer Service and Marketing, Planning and Finance.
- 06.05 Demonstrate an understanding of the various functions of an airport, including airside and landside operations and management, and financial planning, including airport master plans, environmental issues and land use.
- 06.06 Describe the factors of effective communication in an airline/airport environment, such as: Effective listening, minimizing levels of communication, using technology properly, and both formal and informal communication methods.
- 06.07 Describe the various methods of motivation for employees in an airline/airport environment, such as: Reward systems, negative incentives, empowerment and teams versus individual performance.
- 06.08 Demonstrate an understanding of labor relations in an airline/airport environment including the framework of applicable law, how a contract

negotiation works and how a grievance process works.

- 06.09 Describe the effect of various leadership styles that are used in the airline/airport environment, including, an authoritative style, a participative style and a laissez-faire style.
- 06.10 Demonstrate an understanding of the various control processes used in the airline/airport industry, such as: Budgets and audits, physical performance, such as on-time performance and customer complaints and quality issues.
- 06.11 Describe the processes involved with strategic planning and how it is used in the airline/airport industry. This includes: Forecasting of demand, deciding levels of operations, and developing an operational schedule.

**07.0 DEMONSTRATE AN UNDERSTANDING OF AVIATION SECURITY ISSUES AND RESPONSES--The student will be able to:**

- 07.01 Describe the types of threats that can be encountered in civil aviation including bomb threats, and actual bombs, hijackings/air piracy, aggressive/disruptive passengers, and crew and security problems.
- 07.02 Discuss the law of aviation security, such the Aviation Safety and Security Act of 2001, and FAR Parts 108 and 109.
- 07.03 Describe the components of a layered aviation security system.
- 07.04 Demonstrate an understanding of the need for planning for all possible security threats, and having contingency plans and responsive measures.
- 07.05 Explain the specific factors of ground security threats, including restricted access, inspections of personnel baggage and goods.
- 07.06 Discuss possible airborne threats and procedures to deal with those, such as maintaining flight deck integrity and Air Marshals.
- 07.07 Demonstrate an understanding of the technologies that are used in aviation security, as well as effective screening techniques.

07.08 Explain personnel selection, training and methods for maintaining appropriate job performance for security personnel.

**08.0 DEMONSTRATE AN UNDERSTANDING OF AVIATION/AIRLINE MARKETING, CUSTOMER SERVICE/SALES DISTRIBUTION AND RESERVATIONS AND TICKETING**--A student will be able to:

- 08.01 Explain the Marketing Concept and how it differs from the Product and sales Concepts.
- 08.02 Analyze the various environmental factors that affect aviation/airline marketing.
- 08.03 Demonstrate an understanding of market demographics and segmentation.
- 08.04 Explain the methods of market research.
- 08.05 Analyze why a customer buys a particular product or service.
  
- 08.06 Explain the different media that are available for airline industry advertising and promotion, and the advantages and disadvantages of each.
- 08.07 Describe pricing strategies that are used by the airlines.
- 08.08 Describe the factors of success in customer service.
- 08.09 Explain how to deliver quality customer service.
- 08.10 Demonstrate an understanding of why companies lose customers and how to recover a customer from a bad experience.
- 08.11 Explain the principles of reservations, including passenger name records, flight schedules, availability and fares.
- 08.12 Discuss the procedure of airline ticketing, including fares, one way, round trip, change rules, refunds, taxes charges and interline agreements.
- 08.13 Explain the process of internet reservations, e-ticketing and travel agency functions.

DEMONSTRATE AN UNDERSTANDING OF AERO METEOROLOGY AND BASIC SCIENCE /AERODYNAMIC KNOWLEDGE.

A student should be able to:

09.1 Discuss the makeup of the earth's atmosphere and the effect of the sun on the atmosphere.

Describe the movement of air masses and how fronts are created.

Explain how seasons affect weather patterns in various geographic areas.

Describe the effect of the earth's rotation on weather.

Discuss the effect of local geography on weather, such as bodies of water and mountains.

Demonstrate an understanding of hazards to flight, including thunderstorms, icing, turbulence, and fog.

Describe the characteristics of high altitude weather, including jet streams and clear air turbulence, pressure and temperature patterns.

Demonstrate an understanding of the products, reports and forecasts of the National Weather Service as they pertain to Aviation.

Demonstrate an understanding of the basic rules of aerodynamics, including lift, gravity, thrust and drag.

Explain how an aircraft performs in the different regimes of flight, including climb, cruise, turns and descent.

Describe the effects of various inputs of each flight control and their effect, including rudder, elevators, ailerons, flaps and spoilers.

Explain the aerodynamic limits of an aircraft such as stall speeds, maximum speed limits, maneuvering speeds and altitude limits.

Describe the different aspects of both stability and controllability of an aircraft.

Discuss the characteristics of swept wing high speed aircraft, such as Dutch Roll, mach trim, center of lift and buffet limits.

Explain how to obtain the maximum performance out of a particular aircraft in a particular condition.

DEMONSTRATE AN UNDERSTANDING OF AVIATION SAFETY AND HUMAN FACTORS, INCLUDING ACCIDENT PREVENTION. The student will be able to:

Describe the nature of human factors and sources of errors.

Discuss the issues of fatigue, body rhythms and sleep.

Describe the effects of fitness and health on human performance.

Demonstrate an understanding of how motivation and leadership affects safety in aviation.

Discuss the role of training devices and education in reducing errors and increasing safety.

Describe how the physical layout of displays and controls and space relate to human factors errors.

Explain how documentation problems such as manuals and checklists, maps and charts can cause safety issues.

Describe how an aviation safety program is designed to create an environment of safety awareness and accident prevention.

DEMONSTRATE AN UNDERSTANDING OF AIR TRAFFIC CONTROL PROCEDURES AND POLICIES. The student will be able to:

Discuss the basic terminology and communications phraseology that is used in air traffic control.

Describe airspace classifications that are used in air traffic control.

Discuss separation of aircraft requirements.

Demonstrate an understanding of the Federal Aviation Regulations that apply to air traffic control.

Explain aircraft characteristics and recognition.

Describe instrument procedures, for departure, arrival and for IFR flight plans.

Discuss the weather hazards to aircraft, including wake turbulence, downbursts and restrictions to visibility.

Demonstrate an understanding of ATC Clearances, including

their purpose and the different types of ATC clearances, the appropriate sequence and pilot responsibilities for compliance.

11.9 Describe the fundamentals of radar, including information about primary and secondary radar systems.

Explain strip marking (radar and non-radar), including the basic outline for strip marking and the associated symbologies for En Route, Terminal, and Flight Service Options.

Explain non-radar procedures, including horizontal and vertical separation, timed approaches.

DEMONSTRATE AN UNDERSTANDING OF AIR CARGO OPERATIONS AND PROCEDURES. The student will be able to:

Describe the importance of air cargo to the economy.

Discuss the different types of customers and how marketing is done in the air cargo industry.

Explain the role of freight forwarders and customs brokers.

Explain the different classes of cargo, such as general, high value and perishable, including live animals.

Demonstrate an understanding of the documentation requirements for air cargo, such as airway bills, insurance and customs documents.

Describe the packing requirements for air cargo.

Discuss the variety of ways that cargo is loaded on aircraft, including pallets and different sizes and types of containers and the loading equipment that is used.

Explain the weight and balance restrictions that apply to air cargo aircraft.

Describe the classification and identification of the nine classes of hazardous goods and their labeling and packaging requirements and shipping limitations and restrictions.

Discuss what procedures to follow in the case of a dangerous goods accident or incident.

Describe the security requirements for air cargo personnel, facilities and aircraft.

DEMONSTRATE EMPLOYABILITY SKILLS. The student will be able to:

13.1 Conduct a job search.

Secure information about a job.

Identify documents which may be required when applying for a job interview.

Complete a job application form correctly.

Create an appropriate employer/job focused resume.

Demonstrate competence in job interview techniques.

Describe appropriate behavior on the job, including acceptable work and health habits.

Discuss examples of employer discipline, reward and attendance programs as applied to employees.

DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP. The student will be able to:

Define entrepreneurship.

Describe the importance of entrepreneurship to the U.S. economy.

List the advantages and disadvantages of business ownership.

Identify the risks involved in ownership of a business.

Identify the necessary personal characteristics of a successful entrepreneur.

Identify the business skills needed to operate a small business efficiently and effectively.