

**Florida Department of Education
CURRICULUM FRAMEWORK**

Program Title: Air Traffic Control
Program Type: Job Preparatory
Occupational Area: Industrial Education
Components: N/A

	<u>PSAV</u>
Program Numbers	I490105
CIP Number	0649.010500
Grade Level	30, 31
Length	1600 Hours
SOC	53-2021
Certification	AIR CONT @7 G
Facility Code	245
CTSO	SkillsUSA
Coop Method	Yes
Apprenticeship	No

- I. **PURPOSE:** The purpose of this program is to prepare students for initial employment as an air traffic control specialist.

The content should include, but not be limited to: human relations, communication skills, leadership skills, and employability skills, safe and efficient work practices, Federal Aviation Administration regulations, air traffic control procedures, aviation safety, flight psychology, meteorology, navigation and communications.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the Air Traffic Control industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

- II. **LABORATORY ACTIVITIES:** Shop or laboratory activities are an integral part of this program and provide instruction in aircraft guidance systems and aircraft flight control systems in simulations and actual air traffic control environments.
- III. **SPECIAL NOTE:** SkillsUSA, Inc. is the appropriate Career and Technical Student Organization (CTSO) for providing leadership training and for reinforcing specific career and technical skills. Career and Technical Student Organizations, when provided, shall be an integral part of the career and technical instructional program, and the activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, FAC.

Students must meet physical and psychological standards required by the Federal Aviation Administration.

Cooperative training - OJT is appropriate for this program. Whenever cooperative training - OJT is offered, the following are 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 workstation that reflects equipment, skills and tasks that are relevant to the occupation which

the student has chosen as a career goal. The student must receive compensation for work performed.

In accordance with Rule 6A-10.040, FAC, the minimum basic-skills grade levels required for adult vocational students to exit this program are: Mathematics 12.0, Language 12.0, Reading 12.0. These grade-level numbers correspond to grade-equivalent scores obtained on one of the state-designated basic-skills examinations. If a student does not meet the basic-skills level required for completion of the program, remediation should be provided concurrently through Vocational Preparatory Instruction (VPI). Please refer to the Rule for exemptions.

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Adult students with disabilities must self-identify and request such services. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

SCANS Competencies: To accomplish the Secretary's Commission on Achieving Necessary Skills (SCANS) competencies, instructional strategies for this cluster must include methods that require students to identify, organize, and use resources appropriately; to work with each other cooperatively and productively; to acquire and use information; to understand social, organizational, and technological systems; and to work with a variety of tools and equipment. Instructional strategies must also incorporate methods to improve students' personal qualities and higher-order thinking skills.

To be transferable statewide between institutions, this program/course must have been reviewed, and a "transfer value" assigned the curriculum content by the appropriate Statewide Course Numbering System discipline committee. This does not preclude institutions from developing specific program or course articulation agreements with each other.

This program may be offered in courses. Vocational credit shall be awarded to the student on a transcript in accordance with Section 1001 F.S.

The standard length of this program is 1600 hours.

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

OCCUPATIONAL COMPLETION POINT - DATA CODE - A

AIR TRAFFIC CONTROL SPECIALIST - (SOC 53-2021)

- 01.0 Demonstrate an understanding of fundamentals of aeronautics.
- 02.0 Solve basic navigation situations.
- 03.0 Demonstrate an understanding of federal flight rules and regulations.
- 04.0 Develop an understanding of meteorology.
- 05.0 Interpret Federal Aviation Administration enroute and terminal charts and rules.
- 06.0 Demonstrate knowledge and understanding of aircraft engines and systems.
- 07.0 Demonstrate an understanding of aviation safety.
- 08.0 Demonstrate an understanding of aviation law.

- 09.0 Demonstrate appropriate communication skills.
- 10.0 Demonstrate appropriate math skills.
- 11.0 Demonstrate appropriate understanding of basic science.
- 12.0 Demonstrate employability skills.
- 13.0 Demonstrate an understanding of entrepreneurship.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Title: Air Traffic Control
Secondary Number:
Postsecondary Number: I490105

OCCUPATIONAL COMPLETION POINT - DATA CODE - A
AIR TRAFFIC CONTROL SPECIALIST - (SOC 53-2021)

- 01.0 DEMONSTRATE AN UNDERSTANDING OF FUNDAMENTALS OF AERONAUTICS--The student will be able to:
- 01.01 Differentiate between aeronautics and aerodynamics.
 - 01.02 State and give examples of Newton's three laws of motion.
 - 01.03 Name and compare the four forces of flight.
 - 01.04 Describe an airfoil.
 - 01.05 State how lift is produced.
 - 01.06 Discuss how and why an airplane stalls.
 - 01.07 Describe and explain how pilot, vacuum, pressure and engine instruments work.
 - 01.08 Explain the magnetic compass.
- 02.0 SOLVE BASIC NAVIGATION SITUATIONS--The student will be able to:
- 02.01 Define radio navigation and be able to explain VOR and loran principles.
 - 02.02 Define great circle, meridian, longitude, latitude and conic projection.
 - 02.03 Explain and understand the sectional charts used in aviation.
 - 02.04 Explain VOR navigation, radar, DME and RNAV principles.
 - 02.05 Define radial, bearing, tacan, MEA, ASR, IFR, VFR and holding pattern.
- 03.0 DEMONSTRATE AN UNDERSTANDING OF FEDERAL FLIGHT RULES AND REGULATIONS--The student will be able to:
- 03.01 Explain major portion of Parts 1, 61, 67, 91 and 830 of the Federal Aviation Regulations.
- 04.0 DEVELOP AN UNDERSTANDING OF METEOROLOGY--The student will be able to:
- 04.01 State the correct names of the major civilian and military weather organizations.
 - 04.02 Explain why the military needs its own weather service.
 - 04.03 Name and state the function of at least three instruments meteorologists use in gathering weather data.
 - 04.04 Name and describe two types of weather satellites.
 - 04.05 Interpret weather surface charts, station sequence reports, terminal reports and area forecasts.
 - 04.06 Analyze and predict weather using meteorology charts, maps and reports.
- 05.0 INTERPRET FEDERAL AVIATION ADMINISTRATION ENROUTE AND TERMINAL CHARTS AND RULES--The student will be able to:
- 05.01 Explain enroute charts and their legend.

- 05.02 Explain terminal charts and understand the legend.
- 05.03 Understand the parts 61, 91 of the Federal Aviation Regulations.
- 06.0 DEMONSTRATE KNOWLEDGE AND UNDERSTANDING OF AIRCRAFT ENGINES AND SYSTEMS--
-The student will be able to:
 - 06.01 Identify and describe the parts of a reciprocating engine.
 - 06.02 Understand the difference between reciprocating engines and the jet engine.
 - 06.03 Define turbine and ramjet principles.
 - 06.04 Explain the electrical and hydraulic systems on small aircraft.
- 07.0 DEMONSTRATE AN UNDERSTANDING OF AVIATION SAFETY--The student will be able to:
 - 07.01 Explain dangerous areas around jet aircraft, large propeller driven aircraft and around small general aviation aircraft.
 - 07.02 Identify dangerous weather conditions.
 - 07.03 Differentiate between various causes of airsickness.
 - 07.04 Explain the ATC system as it operates today and the safety aspects.
 - 07.05 Define hypoxia and hyperventilation and list the causes of each.
- 08.0 DEMONSTRATE AN UNDERSTANDING OF AVIATION LAW--The student will be able to:
 - 08.01 Explain and define liability, pilot in command, owner and other terms used in aviation law.
 - 08.02 Explain the differences between civil and military law as it relates to aviation.
 - 08.03 List and describe the agencies both federal and international that affect aviation laws and regulations.
- 09.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS--The student will be able to:
 - 09.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
 - 09.02 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
 - 09.03 Read and follow written and oral instructions.
 - 09.04 Answer and ask questions coherently and concisely.
 - 09.05 Read critically by recognizing assumptions and implications and by evaluating ideas.
 - 09.06 Demonstrate appropriate telephone/communication skills.
- 10.0 DEMONSTRATE APPROPRIATE MATH SKILLS--The student will be able to:
 - 10.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
 - 10.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
 - 10.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
 - 10.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
 - 10.05 Demonstrate an understanding of federal, state and local taxes and their computation.

- 11.0 DEMONSTRATE APPROPRIATE UNDERSTANDING OF BASIC SCIENCE--The student will be able to:
- 11.01 Understand molecular action as a result of temperature extremes, chemical reaction, and moisture content.
 - 11.02 Draw conclusions or make inferences from data.
 - 11.03 Identify health-related problems which may result from exposure to work related chemicals and hazardous materials, and know the proper precautions required for handling such materials.
 - 11.04 Understand pressure measurement in terms of P.S.I., inches of mercury, and K.P.A.
- 12.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:
- 12.01 Conduct a job search.
 - 12.02 Secure information about a job.
 - 12.03 Identify documents, which may be required when applying for a job interview.
 - 12.04 Complete a job application form correctly.
 - 12.05 Demonstrate competence in job interview techniques.
 - 12.06 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
 - 12.07 Identify acceptable work habits.
 - 12.08 Demonstrate knowledge of how to make appropriate job changes.
 - 12.09 Demonstrate acceptable employee health habits.
 - 12.10 Demonstrate knowledge of the "Right-To-Know Law" as recorded in (29 CFR-1910.1200).
- 13.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to.
- 13.01 Identify characteristics of the American enterprise system.
 - 13.02 Define inflation and deflation.
 - 13.03 Illustrate the basic economic questions facing any society.
 - 13.04 Determine the results of a change in demand or a change in supply.
 - 13.05 List factors, which contribute to economic growth.
 - 13.06 Identify characteristics of different types of business ownership.
 - 13.07 Choose appropriate action in a situation requiring application of business ethics.