

Implementation Date  
Fall 2008

**PROGRAM CONCENTRATION:** Architecture, Construction,  
Communications & Transportation  
**CAREER PATHWAY:** Flight Operations  
**COURSE TITLE:** Aeroscholars Aviation Ground School

Aeroscholars Aviation Ground School is the final course of a four-year term of study. Upon successful completion of this course, the student will be prepared to take the Federal Aviation Administration (FAA) Private Pilot Written Exam.

## **Introduction to Flight**

**ACT-AGS-1. Students will develop an understanding of aviation resources, historical development, and basic aerodynamic principles involved in flight.**

- a. Utilize a variety of resources to obtain historical and scientific information.
- b. Recognize math as an essential tool.
- c. Understand the historical significance of the development of flight.

### **ACADEMIC STANDARDS:**

*SCSh4. Students will use tools and instruments for observing, measuring, and manipulating scientific equipment and materials.*

*SCSh5. Students will demonstrate the computation and estimation skills necessary for analyzing data and developing reasonable scientific explanations.*

**ACT-AGS-2. Students will understand the airframe, power plant, and instruments of an aircraft.**

- a. Understand the form and function of aircraft design.
- b. Recognize the various operating principles of aircraft engines and their applications.
- c. Explore the operating principles of major aircraft systems.

### **ACADEMIC STANDARDS:**

*SCSh4. Students will use tools and instruments for observing, measuring, and manipulating scientific equipment and materials.*

*SCSh5. Students will demonstrate the computation and estimation skills necessary for analyzing data and developing reasonable scientific explanations.*

Implementation Date  
Fall 2008

**ACT-AGS-3. Students will recognize the historical and technological influences that helped shape the development of aviation.**

- a. Trace historical events that impacted the development of aviation.
- b. Understand the evolution of technologies that have advanced aviation.
- c. Know the difference between general, commercial, and military aviation and their functions.

**ACADEMIC STANDARDS:**

*SCSh7. Students will analyze how scientific knowledge is developed.*

**ACT-AGS-4. Students will understand the relationship between the entities involved in the airspace system.**

- a. Understand the differences between different types of airports and their operational procedures.
- b. Understand the Air Traffic Control system.
- c. Know the purpose of Federal Aviation Regulations.

**ACADEMIC STANDARDS:**

*SCSh7. Students will analyze how scientific knowledge is developed.*

**ADVANCED PRINCIPLES**

**ACT-AGS-5. Students will become familiar with the factors that affect aircraft performance.**

- a. Recognize components of an aircraft and their uses.
- b. Perform weight and balance calculations.
- c. Incorporate mathematics to calculate minimum fuel loads and wind vectors.
- d. Use mathematics to calculate density altitude.

**ACADEMIC STANDARDS:**

*SCSh5. Students will demonstrate the computation and estimation skills necessary for analyzing data and developing reasonable scientific explanations.*

*SPS8. Students will determine relationships among force, mass, and motion.*

**ACT-AGS-6. Students will develop proficiency in using the available resources for flight planning.**

- a. Monitor meteorological data utilized in flight planning.
- b. Utilize aeronautical charts and plotters to plan a flight.

Implementation Date  
Fall 2008

- c. Use proper protocols when communicating information.
- d. Apply standard procedures to complete a cross-country flight plan.

**ACADEMIC STANDARDS:**

*SCSh4. Students will use tools and instruments for observing, measuring, and manipulating scientific equipment and materials.*

*SCSh5. Students will demonstrate the computation and estimation skills necessary for analyzing data and developing reasonable scientific explanations.*

**ACT-AGS-7. Students will develop an awareness of the wide range of careers available in aviation.**

- a. Understand the unique aspects of various aviation careers.
- b. Understand specialized requirements for aviation jobs.
- c. Apply an understanding of aviation careers to personal lifetime career goals.

**CTAE Foundation Skills**

The Foundation Skills for Career, Technical and Agricultural Education (CTAE) are critical competencies that students pursuing any career pathway should exhibit to be successful. As core standards for all career pathways in all program concentrations, these skills link career, technical and agricultural education to the state's academic performance standards.

The CTAE Foundation Skills are aligned to the foundation of the U. S. Department of Education's 16 Career Clusters. Endorsed by the National Career Technical Education Foundation (NCTEF) and the National Association of State Directors of Career Technical Education Consortium (NASDCTEC), the foundation skills were developed from an analysis of all pathways in the sixteen occupational areas. These standards were identified and validated by a national advisory group of employers, secondary and postsecondary educators, labor associations, and other stakeholders. The Knowledge and Skills provide learners a broad foundation for managing lifelong learning and career transitions in a rapidly changing economy.

**CTAE-FS-1 Technical Skills:** Learners achieve technical content skills necessary to pursue the full range of careers for all pathways in the program concentration.

**CTAE-FS-2 Academic Foundations:** Learners achieve state academic standards at or above grade level.

**CTAE-FS-3 Communications:** Learners use various communication skills in expressing and interpreting information.

Implementation Date  
Fall 2008

**CTAE-FS-4 Problem Solving and Critical Thinking:** Learners define and solve problems, and use problem-solving and improvement methods and tools.

**CTAE-FS-5 Information Technology Applications:** Learners use multiple information technology devices to access, organize, process, transmit, and communicate information.

**CTAE-FS-6 Systems:** Learners understand a variety of organizational structures and functions.

**CTAE-FS-7 Safety, Health and Environment:** Learners employ safety, health and environmental management systems in corporations and comprehend their importance to organizational performance and regulatory compliance.

**CTAE-FS-8 Leadership and Teamwork:** Learners apply leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.

**CTAE-FS-9 Ethics and Legal Responsibilities:** Learners commit to work ethics, behavior, and legal responsibilities in the workplace.

**CTAE-FS-10 Career Development:** Learners plan and manage academic-career plans and employment relations.

**CTAE-FS-11 Entrepreneurship:** Learners demonstrate understanding of concepts, processes, and behaviors associated with successful entrepreneurial performance.