

Colorado CTE Course – Scope and Sequence

Course Name	Aviation Fundamentals/Private Pilot Ground School (MSU AES 1100 or Colorado Community College Course AVT101) This is a concurrent enrollment course with MSU Denver or one of the Colorado Community Colleges/Technical Schools.		Course Details	Credit = 0.5 CTE Credential: CTE Transportation (Additional instructor qualifications are determined by MSU Denver or the designated Colorado community college.)	
			Course = 0.50 Carnegie Unit Credit		
Course Description	This course presents the fundamentals of aviation for the beginning student which includes a study of the airplane and its components, aerodynamics, basic aircraft systems, the airport environment, air-traffic control procedures, Federal Aviation Regulations, the basic elements of air navigation including radio navigation, and a review of aviation weather. It prepares the student for the Federal Aviation Administration (FAA) Private Pilot Knowledge examination.				
Note:	This is a suggested scope and sequence for the course content. The content will work with any textbook or instructional resource. If locally adapted, make sure all essential knowledge and skills are covered.				
SCED Identification #		Schedule calculation based on 60 calendar days of a 90-day semester. Scope and sequence allows for additional time for guest speakers, student presentations, field trips, remediation, or other content topics.			
All courses taught in an approved CTE program must include Essential Skills embedded into the course content. The Essential Skills Framework for this course can be found at https://www.cde.state.co.us/standardsandinstruction/essentialskills					
Instructional Unit Topic	Suggested Length of Instruction	CTE or Academic Standard Alignment	Competency / Performance Indicator	Outcome / Measurement	CTSO Integration
A. Discovering Aviation a. Pilot Training b. Aviation Opportunities c. Introduction to Human Factors B. Airplane Systems a. Airplanes			Demonstrate mastery by passing the FAA Knowledge Exam for Private Pilot Airplane, Single Engine, and Land with a minimum score of 70% in the areas of: A) Airplane Systems B) Aerodynamic Principles		

b. The Powerplant and Related Systems c. Flight Instruments C. Aerodynamic Principles a. Four Forces of Flight b. Stability c. Aerodynamics of Maneuvering Flight D. The Flight Environment a. Safety of Flight b. Airports c. Aeronautical Charts d. Airspace E. Communication and Flight Information a. Radar and ATC Services b. Radio Procedures c. Sources of Flight Information F. Meteorology for Pilots a. Basic Weather Theory			C) The Flight Environment D) Communications and Flight Information E) Meteorology for Pilots F) Interpreting Weather Data G) Airplane Performance H) Navigation I) Human Factors Principles J) Cross Country Flight K) Federal Aviation Regulations		
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b. Weather Patterns c. Weather Hazards G. Interpreting Weather Data a. The Forecasting Process b. Printed Reports and Forecasts c. Graphic Weather Products d. Sources of Weather Information H. Airplane Performance a. Predicting Performance b. Weight and Balance c. Flight Computers I. Navigation a. Pilotage and Dead Reckoning b. VOR Navigation c. ADF Navigation d. Advanced Navigation J. X Applying Human Factors Principles					
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K. Aviation Physiology					
L. Aeronautical Decision Making					
M. Flying Cross- Country					
a. The Flight Planning Process					
b. The Flight					
N. Federal Aviation Regulations					
a. 14 CFR Part 1 Definitions and Abbreviations					
b. 14 CFR Part 61 Certification: Pilots, Flight Instructors and Ground Instructors					
c. 14 CFR Part 91 General Operating and Flight Rules					
d. NTSB 830 Aircraft Accident and Incident Reporting					

Academic Standards Alignment

Colorado CTE courses are required to integrate academic and essential skills into course content. The following academic standards have been identified as aligned to this course and should be integrated throughout instruction.

CO CTE Academic Standards Resources (Rubrics, integration strategies, etc) CDE Colorado Academic Standards Online (Online standards lookup tool)

Reading, Writing, & Communicating

Standard 1: Oral Expression and Listening

- **Prepared Graduate 1:** Collaborate effectively as group members or leaders who listen actively and respectfully; pose thoughtful questions, acknowledge the ideas of others; and contribute ideas to further the group's attainment of an objective.
- **Prepared Graduate 2:** Deliver effective oral presentations for varied audiences and varied purposes.

Standard 2: Reading for All Purposes

- **Prepared Graduate 3:** Read a wide range of literary texts to build knowledge and to better understand the human experience.
- **Prepared Graduate 4:** Read a wide range of informational texts to build knowledge and to better understand the human experience.
- **Prepared Graduate 5:** Understand how language functions in different contexts, command a variety of word-learning strategies to assist comprehension, and make effective choices for meaning or style when writing and speaking.

Standard 3: Writing and Composition

- **Prepared Graduate 6:** Craft arguments using techniques specific to the genre.
- **Prepared Graduate 7:** Craft informational/explanatory texts using techniques specific to the genre.
- **Prepared Graduate 8:** Craft narratives using techniques specific to the genre.
- **Prepared Graduate 9:** Demonstrate mastery of their own writing process with clear, coherent, and error-free polished products.

Standard 4: Research Inquiry and Design

- **Prepared Graduate 10:** Gather information from a variety of sources; analyze and evaluate its quality and relevance; and use it ethically to answer complex questions.

Note: Mathematics and Science standards will be added in the future. Visit the [Colorado Academic Standards](#) page for the most current version.