

2026 AVIATION

Program Standards

CONTENT STANDARD 1.0: PROFESSIONAL ORGANIZATIONS AND LEADERSHIP

Performance Standard 1.1: Student Leadership in Career Technical Student Organizations (CTSO) and Professional Associations

- 1.1.1 Explore the role of professional organizations and/or associations in the Aviation Industry.
- 1.1.2 Define the values, roles, and opportunities provided through career technical student organizations.
- 1.1.3 Engage in career exploration and leadership development.

CONTENT STANDARD 2.0: AERONAUTICAL KNOWLEDGE AND THEORY

Performance Standard 2.1: Principles of Flight

- 2.1.1 Describe how lift, drag, thrust, and weight affect aircraft performance.
- 2.1.2 Describe how weight and balance affect aircraft performance.
- 2.1.3 Calculate aircraft weight and balance.
- 2.1.4 Describe how aerodynamics affects aircraft performance.
- 2.1.5 Describe an airfoil, based on the principles of flight.

Performance Standard 2.2: Aircraft Systems

- 2.2.1 Identify major aircraft systems/UAS (Unmanned Aircraft Systems) (e.g., pitot-static, power plant, oil/lubrication, fuel system, electrical, primary and secondary flight controls, landing, avionics, vacuum, environmental, icing/de-icing) and their functions.
- 2.2.2 Diagram major systems in aircraft.
- 2.2.3 Identify major aircraft/UAS components (e.g. propeller, instrumentation, rotor) and their functions.
- 2.2.4 Describe common system malfunctions or failures.
- 2.2.5 Describe troubleshooting procedures for system and component problems, based on scenarios.
- 2.2.6 Identify types and purposes of performance charts.
- 2.2.7 Identify performance chart characteristics.

Performance Standard 2.3: Airspace and Charts

- 2.3.1 Interpret chart symbols.
- 2.3.2 Interpret sectional charts (e.g., visual flight rules [VFR], terminal area chart [TAC]).
- 2.3.3 Describe types of airspace (i.e., A, B, C, D, E, G).
- 2.3.4 Identify operational limits (e.g., special use and other use airspaces, special VFR, weather minimums), based on airspace.
- 2.3.5 Describe types of notices to airmen (NOTAMS) and temporary flight restrictions (TFRs) and their functions.
- 2.3.6 Access NOTAMS and TFRs.

Performance Standard 2.4: Aviation Weather

- 2.4.1 Identify visual wind indicators at airfields (e.g., windsock, wind Tee, segmented circle system, wind tetrahedron).
- 2.4.2 Access sources of weather data.
- 2.4.3 Describe compositions of atmospheres (e.g., percentage of gasses, atmospheric layers, cloud type, turbulence, icing, frost, fog, mist).
- 2.4.4 Describe variables that affect density altitude performance (e.g., elevation, temperature, humidity, barometric pressure) and how they affect flight.
- 2.4.5 Describe weather reporting (e.g., aviation weather advisories).
- 2.4.6 Interpret weather depiction chart reading (e.g., digital display reading).

- 2.4.7 Interpret (i.e., decode) Meteorological Aerodrome Reports (METARs) and Terminal Aerodrome Forecast (TAFs).
- 2.4.8 Assess weather impacts on flight planning to determine a go or no-go decision.
- 2.4.9 Compare visual meteorological conditions (VMC) to instrument meteorological conditions (IMC).

Performance Standard 2.5: Navigation and Flight Planning

- 2.5.1 Identify tools used in navigation (e.g., global positioning system [GPS], pilotage, VHF Omnidirectional Range [VOR], dead reckoning, magnetic compass), their functions and limitations.
- 2.5.2 Plot cross-country routes, using VFR charts in various methods (i.e., manually/on paper, electronically).
- 2.5.3 Calculate fuel/time, using performance charts (i.e., manually/on paper, electronically).
- 2.5.4 Calculate wind corrections, using performance charts (i.e., manually/on paper, electronically).

Performance Standard 2.6: Airport Operations

- 2.6.1 Describe types of airports (e.g., civil, military, private, seaport, tower, non-tower, controlled, uncontrolled).
- 2.6.2 Identify airport lighting, signage, and markings.
- 2.6.3 Describe traffic patterns (e.g., air, ground, right-of-way rules, altitudes).
- 2.6.4 Describe runway incursions and avoidance.
- 2.6.5 Interpret airport diagrams.

Performance Standard 2.7: Communications

- 2.7.1 Identify communication equipment (e.g., transponder, automatic dependent surveillance–broadcast [ADS-B], primary radar, secondary radar).
- 2.7.2 Describe emergency communication procedures (e.g., transponder codes, lost communication, emergency frequency, lost link).
- 2.7.3 Describe radio standardized protocol (e.g., phonetic alphabet, etiquette, phraseology, call signs, location, intention).
- 2.7.4 Describe requirements (i.e., when and where) of radio communications.
- 2.7.5 Describe air traffic control (ATC) services and roles/functions.

Performance Standard 2.8: Regulations

- 2.8.1 Describe pilot responsibilities, applying Federal Aviation Regulations (FAR) and the Aeronautical Information Manual (AIM) (e.g., Part 1, 43, 61, 71, 73, 91, 107, 141; Code of Federal Regulations [CFR] 49, Part 830).
- 2.8.2 Describe pilot eligibility requirements (e.g., private pilot, UAS, minimum ages, medical).
- 2.8.3 Determine the level of flight medical certification required for various pilot licenses.
- 2.8.4 Access pilot-suggested study lists.
- 2.8.5 Describe applicable components of a FAR (i.e., Title 14, Chapter 1).
- 2.8.6 Identify the required parts of logbook entries.

Performance Standard 2.9: Flight Safety

- 2.9.1 Describe the history of aeronautical decision-making (ADM).
- 2.9.2 Apply ADM, based on scenarios.
- 2.9.3 Identify safety checklists (e.g., Pilot-Aircraft-EnVironment-External pressures [PAVE], Illness-Medication-Stress-Alcohol-Fatigue-Eating/Emotional stability [IMSAFE], Detect-Estimate-Choose-Do-Evaluate [DECIDE], Perceive-Process-Perform [3Ps], Plan-Plane-Pilot-Passengers-Programming [5Ps]) to promote a safe environment.
- 2.9.4 Describe the causes of stalls and spins, and the importance of situational pilot responses based on changing conditions.
- 2.9.5 Describe hazardous attitudes and antidotes.
- 2.9.6 Describe safety procedures based on scenarios (e.g., engine failure, lost-link, fires, system malfunctions).

- 2.9.7 Assess operational risks, using crew resource management (CRM) principles.
- 2.9.8 Describe human physiological factors (e.g., hypoxia, hyperventilation, middle-ear problems, sinus problems, spatial disorientation, motion sickness, carbon monoxide poisoning, stress, fatigue, dehydration, nutrition, hypothermia, optical illusions, dissolved nitrogen in the bloodstream) and corrective actions related to flight safety.
- 2.9.9 Describe regulations pertaining to alcohol and drug use by aviation personnel.
- 2.9.10 Describe effects of alcohol, drugs, and over-the-counter (OTC) medication on aviation personnel.

Performance Standard 2.10: Aerospace Careers Exploration

- 2.10.1 Describe aerospace pathways (e.g., instructor, commercial airline pilot, ATC, unmanned aircraft system [UAS] operator, military pilot, airport management, aviation maintenance technician, ground operations, flight engineer).
- 2.10.2 Describe educational requirements and educational options for pursuing aerospace careers.

CONTENT STANDARD 3.0: FLIGHT OPERATIONS AND RISK MANAGEMENT

Performance Standard 3.1: Preflight Procedures

- 3.1.1 Interpret airworthiness directives (ADs).
- 3.1.2 Interpret safety bulletins (SBs).
- 3.1.3 Compare directives to bulletins.
- 3.1.4 Identify required aircraft documents (e.g., Airworthiness certificate – Registration certificate – Operating limitations – Weight and balance data [AROW]).
- 3.1.5 Describe required inspections and maintenance (e.g., Annual inspection – VOR check, 100-hour inspection – Altimeter and pitot-static system – Transponder inspection – Emergency locator transmitter – SBs and ADs [AV1ATES], Federal Aviation Administration [FAA] Chapter 9 of Pilot's Operating Handbook [POH]).
- 3.1.6 Conduct aircraft/UAS inspections to verify airworthiness.

CONTENT STANDARD 4.0: UAS

Performance Standard 4.1: UAS Regulations

- 4.1.1 Describe Part 107 rules, waivers, and operational limitations.
- 4.1.2 Describe locality-specific regulations and laws.
- 4.1.3 Identify UAS-specific CRM and emergency procedures.
- 4.1.4 Describe ethical issues in surveillance and privacy.
- 4.1.5 Describe remote identification (RID) requirements and compliance strategies.
- 4.1.6 Describe UAS pilot eligibility (i.e., licensure).

Performance Standard 4.2: UAS Maintenance and Mission Plans

- 4.2.1 Describe basic maintenance and troubleshooting for UAS.
- 4.2.2 Describe aspects of planning drone missions: mapping, inspection, and delivery.

IDCTE Document Control Information

Program Standard Revision: ETE Aviation

| Date | Standard # | Original | Summary of Change | Revised By | Approved By |
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