STRANDS AND STANDARDS
FLIGHT SIMULATOR

Learning that works for Utah
CTE®

Course Description

The Flight Simulator course will give students hands-on experience, training, and knowledge in preparation for the real world experience of flying. Students will learn the basic skills needed to fly an airplane. Some of those skills include takeoffs, climbs, turns, descents, landing, navigating, and much more. Flight simulation provides a safe, low stress and cost effective way to learning some of the basic aviation skills that you will need as a pilot.

Intended Grade Level	11-12
Units of Credit	Minimum 0.5
Core Code	40.11.00.00.048
Concurrent Enrollment Core Code	40.11.00.13.048
Prerequisite	Private Pilot
Skill Certification Test Number	Industry Test 959
Test Weight	1.0
License Area of Concentration	CTE and/or Secondary Education 6-12
Required Endorsement(s)	
Endorsement 1	Aviation - Flight
Endorsement 2	--
Endorsement 3	--

STRAND 1

Students will be able to understand and demonstrate pre-flight procedures.

Standard 1

Students will understand and demonstrate the proper use of checklists for pre-flight planning and procedures.

- Cockpit familiarization.
- Checklists: before start, start/run-up, cruise, shutdown.
- Required documents and inspections.
- Instruments for visual flight rules (VFR) flights.
- Flight controls and control surfaces.
- Review flight maneuvers to be performed.
- VFR scanning outside/inside references.

Standard 2

Students will understand and demonstrate pre-flight preparations.

- Obtain pertinent weather with the appropriate sources of weather.
- Evaluate cross-wind performance before takeoff.
- Identify traffic patterns based on current winds and conditions.
- Anticipate proper radio procedures for flight.
- Review flight plan (route and navigation).
- Review approaches and landings.
- Crew departure briefing.

Standard 3

Students will apply appropriate simulated ground operations.

- Engine start-up.
- Taxi (daytime and nighttime procedures).
- Engine run-up (appropriate checklist use).
- Engine gauges and monitoring.

Performance Skills

- Collaboratively perform the proper use of a pre-flight checklist and crew departure briefing.

STRAND 2

Students will be able to calculate the proper weight and balance; and performance data.

Standard 1

Students will calculate weight and balance and performance data.

- Performance chart calculations.
- Weight and balance calculations.
- Take-off and landing distances.
- Maximum performance take-off and climb.
- Performance approach and landing (short-field or soft-field).

Performance Skills

- Calculate weight and balance.
- Calculate performance data.

STRAND 3

Students will be able to understand and demonstrate flight operations.

Standard 1

Students will fly an aircraft through simulator equipment.

- Take-offs (normal, crosswind, short-field, soft-field).
- Landings (normal, crosswind, short-field, soft-field).
- Airspeed and altitude control.
- Use of outside and inside references.
- Scanning for traffic.

Standard 2

Students will demonstrate performance and ground-reference maneuvers.

- Performance (steep turns, slow flight, power on stall, power off stall).
- Ground-reference (rectangular course, turns around a point, s-turns).

Standard 3

Students will demonstrate basic instrument maneuvers.

- Straight and level flight.
- Constant airspeed climbs.
- Constant airspeed descents.
- Turns to headings.
- Recovery from unusual flight attitudes.

Standard 4

Students will demonstrate proper use of navigational equipment.

- Pilotage and dead reckoning.
- Navigation systems and radar services.
- Diversions.
- Lost procedures.

Standard 5

Students will practice emergency procedures.

- Emergency descent.
- Emergency approach and landing.
- Systems and equipment malfunction.
- Engine failure after liftoff.
- Approach and landing with an inoperative engine.
- Lost communication procedures.

Performance Skills

- Complete a successful emergency flight scenario.
- Complete takeoffs and landings to FAA standards.
- Complete a successful solo flight.
- Complete a successful cross-country scenario (optional).

STRAND 4

Students will understand the importance of career readiness skills as it relates to participation in TSA (Technology Student Association), SkillsUSA, or any other related CTSO in aviation-related fields.

Performance Skills

The following aviation workplace skills should be discussed, taught, re-enforced, and modeled throughout the strands and standards of the course:

- Communication
- Teamwork
- Critical and Creative Thinking
- Problem Solving
- Dependability