

Unit	Unit Title	Concepts	Objectives
Unit 1	Aerospace Technologies	Technology Characteristics Core Concepts of Technology Attributes of Design Engineering Design Process	Know and understand the core concepts of technology.
			Apply the core concepts of technology using the engineering design process.
Unit 2	ABC's of Aerospace	General Aviation Commercial Aviation Military Aviation	Describe and define different categories of aviation.
Unit 3	Science of Aerospace	Physics: Aerostatics & Aerodynamics Chemistry: Aviation Gas vs. Rocket Fuel Biology: Effects of Flight on the Body Living in Space	Define terminology associated with aerostatics and aerodynamics.
			Explain how buoyancy principles affect an object in a fluid.
			Explain how Bernoulli's Principle, Newton's Third Law of Motion and the Magnus Effect apply to an object in flight.
			Build an aerostatic vehicle.
			Build an aerodynamic vehicle
			Explain impacts of flight on the human body.
			Explain effects of living in microgravity on the human body.
Unit 4	Aerospace: Flight in the Atmosphere	Preflight Introduction to the Airplane Systems Instruments Weight and Balance Performance Weather Navigation Safety of Flight	Identify the parts of an airplane.
			Explain the function and role of the parts of an airplane.
			Understand how various systems support the operation of an aircraft.
			Understand center of gravity, airplane weight and balance, and their importance to flight.
			Demonstrate how to compute weight and balance.
			Understand how weather theory contributes to a pilot's ability to make sound decisions regarding safety of flight.

			Identify methods pilots use to navigate and plot courses to fly.
			Identify common errors and issues that negatively impact flight safety.
			Understand methods pilots use to analyze factors associated with flight and how that analysis improves safety of flight.
Unit 5	Aerospace: Flight Outside of the Atmosphere	Rocket Propulsion Systems Satellite Systems	Demonstrate knowledge of both liquid and solid propellant rocket propulsion systems.
			Describe the basic functions and advantages of communications, weather, and navigation satellites.
Unit 6	Capstone Project	Aerospace problems and solutions	Given an aerospace problem, research and present potential solutions.