

<b>Course ID</b>	<b>Course Name</b>	<b>Course Outcome</b>
<b>AERO 100</b>	<b>Primary Pilot Ground School</b>	<p>All AERO 23 students will demonstrate college level math skills. Analyze the fundamentals of airplane and helicopter aerodynamics and flight characteristics.</p> <p>Calculate and complete a flight planning log using aircraft performance data, aeronautical charts, navigation plotter, and manual flight computer. Identify terms and vocabulary associated with piloting and air traffic control. Interpret radio navigation instruments and determine the aircraft line of position. Recognize symbols and decode data from aeronautical charts. Students will be able to compute safe limits of aircraft weight and balance on light aircraft.</p> <p>Students will demonstrate their understanding of the various procedures and techniques utilized in cross-country flight navigation Use and read six basic flight instruments.</p>
<b>AERO 102</b>	<b>Aviation Weather</b>	<p>Appraise cause and effect of evaporation, saturation, condensation, and precipitation on atmosphere's water cycle. Correlate and summarize the aviation weather conditions and forecast for a specific location on a particular day using U.S. Low-Level Significant Weather Prognostic Chart, High-Level Significant Weather Prognostic Chart, and the Radar Summary Chart. Determine effect of earth's uneven heat distribution on atmospheric pressure and weather.</p> <p>Encode and decode hourly surface weather observations; and decode pilot reports, terminal forecasts, area forecasts, winds aloft forecasts, and meteorological advisories.</p> <p>Identify layers of earth's atmosphere and determine height and at least one characteristic of each layer. Relate differences in true altitude, actual altitude, indicated altitude, and pressure altitude.</p> <p>Students will be able to decipher Federal Aviation Administration hourly airport weather observations (METAR) and terminal aerodrome forecasts (TAF). Students will be able to distinguish the various types of air masses and fronts that affect the weather of the United States.</p>
<b>AERO 104</b>	<b>Federal Aviation Regulations</b>	<p>Analyze requirements for Visual Flight Rules operations, including weather minimums in a variety of airspace scenarios. Classify airspace by operational differences and equipment requirements.</p>

Examine the variety of planning requirements for cross-country flights including an analysis of FAR Part 1 regulations.

Identify the FAA eligibility requirements, aeronautical knowledge requirements and aeronautical experience requirements for each FAA pilot certificate and rating.

Identify the terms and vocabulary associated with aviation terminology and federal aviation regulations.

Students will be able to identify FAA eligibility requirements and aeronautical experience requirements for each FAA pilot certificate and rating.

Students will be able to identify, classify, and describe FAA airspace by the operational differences and equipment requirements.

**AERO 150      Commercial Pilot Ground School**

Appraise takeoff decisions based on computed aircraft weight and balance, including center of gravity and the aircraft's safe operating limitations.

Calculate aircraft performance data necessary for takeoff and landing, and cross-country flight.

Describe the objective, procedures, and common errors of the Commercial Pilot flight maneuvers.

Diagram the basic fuel system of a single-engine aircraft and relate the function of individual components to the overall system.

Explain the principles of flight and aerodynamics as they relate to high-performance aircraft.

Students completing the course will be able to compute takeoff and landing data.

Students will be able to compute weight and balance calculations that include 'weight shift' and 'weight change' problems

**AERO 152      Air Transportation**

Analyze aviation career opportunities in regard to personal strengths and weaknesses, minimum job requirements, and job outlook

Analyze economic and marketing process within a typical airline

Distinguish economic, cultural, and political factors impacting the air transportation industry

Evaluate the administrative processes of agencies regulating air transportation industry

Identify organizations controlling the regulatory processes in international aviation

Identify the components of a commercial organization which administers and operates a typical airline

Identify the events, persons, equipment, facilities, and legislation which led to development of air transportation industry

Students will analyze the economic and marketing process within a typical airline

Students will Identify the events, persons, equipment, facilities, and legislation which led to the development of the air transportation industry

**AERO 200      Aviation Safety and Human Factors**

Analyze aviation accident case studies and identify key factors leading to the accidents.

Combine techniques for Crew Resource Management into principles of applied cockpit and air traffic control efficiency and safety.

Describe the various human factors that relate to and/or lead to an aviation accident.

Explain the common illusions that a pilot might experience during flight.

Identify strategies recommended to reduce hazardous personal attitudes leading to pilot error and aviation accidents.

Students will be able to identify the aeronautical decision making process

Students will be able to identify the common chain of events that lead to aircraft accidents

**AERO 202      Aircraft and Engines**

Analyze operation of jet engine fuel systems, fuel storage, and fuel transfer.

Diagram basic aircraft subsystems, including hydraulic systems and pneumatic systems (to include identification of system components and their function).

Differentiate aircraft engine problems from malfunctions involving other aircraft subsystems, including relating decisions for successful troubleshooting of operational engine problems.

Identify engine components and their function on a four-stroke aircraft engine.

Interpret aircraft schematic diagrams and illustrated parts breakdowns.

Students will be able to differentiate between fixed pitch and variable pitch propeller systems

Students will be able to identify the Four Stroke Engine Cycle and the components of the aircraft engine

**AERO 206L      Flight Simulator Laboratory**

Students will demonstrate basic skill in instrument cross-check (scan), instrument interpretation, and aircraft control.

Students will demonstrate basic skills in intercepting and tracking VOR radials and airways.

**AERO 250      Navigation**

Calculate solutions to aircraft performance charts and dead-reckoning navigation problems using a manual flight computer.

Compare and contrast terrestrial radio navigation systems with satellite-based navigation systems.

Define the terms and vocabulary associated with aeronautical charting, aerial navigation, and electronic navigation.  
Evaluate flight scenarios and select appropriate courses of action in relation to navigation systems and methods.  
Explain the principles of radio navigation.  
Students completing the course will be able to identify, utilize, and integrate advanced radio navigation systems into their local and cross country flight planning procedures.  
Students will be able to complete aircraft flight planning logs utilizing the various procedures and techniques for long range navigation.

**AERO 252 Instrument Ground School**

Analyze aircraft instruments to assure that each instrument is functioning properly  
Calculate and complete an instrument flight planning log using aircraft performance data, instrument routing, weather data, and flight computer  
Diagram an instrument holding pattern and compute an appropriate holding pattern entry

Examine departure situations, including analysis of aircraft equipment requirements for IFR flights.  
Explain the minimum flight instruments required for instrument flight  
Students will be able to diagram holding patterns and holding pattern entries using a variety of radio navigation systems.  
Students will be able to plan IFR (Instrument Flight Rules) cross country flights.

**AERO 254 Aircraft Dispatcher Operations**

Students will be able to analyze weather forecasts to determine departure minimums and possible alternates, routing, and destination alternate(s).

**AERO 256 Flight Instructor Ground School**

Analyze basic flight maneuvers for common coordination errors made by student pilots.  
Combine factors necessary for successful completion of newly introduced flight maneuvers and demonstrate how these factors will be utilized in flight lessons.  
Construct flight lesson plans, provide background regarding required training items, and demonstrate lesson plans to peers.  
Differentiate errors made by student pilots in basic flight maneuvers, including correction of those errors by demonstration and further practice.  
Distinguish flight test preparation requirements, including documents required.  
Students will be able to demonstrate knowledge of instructional methods as outlined by the FAA  
Students will create lesson plans for basic and advanced flight lessons

<b>AERO 258</b>	<b>Multi-Engine Turbine Aircraft Operations</b>	<p>Analyze subsystem malfunctions (simulated) that might occur during emergency conditions and provide resolution scenarios that are applicable to the safe completion of the flight.</p> <p>Combine performance data for a multi-engine turbine aircraft to determine operational safety relative to takeoff and landing distance criteria and operational air speeds. Diagram aircraft subsystems (including hydraulic systems and emergency equipment), to include identification of primary components and their function. Identify characteristics of high speed flight that require special action by pilots previously trained in lower performance aircraft. Relate performance characteristics to observed cockpit indications, including the detection of parameters outside of normal expected performance. Students will be able to diagram aircraft subsystems (including hydraulic systems and emergency equipment), to include identification of primary components and their function</p> <p>Students will be able to differentiate characteristics of high speed flight that require special action by pilots previously trained in lower performance aircraft.</p>
<b>AIRT 151</b>	<b>Aircraft Recognition and Performance</b>	<p>Student will be able to recognize aircraft visually and identify the aircraft's manufacturer, aircraft designator, aircraft name, and FAA identification number. Students will be able to identify aircraft by their category and weight class for separation purposes.</p>
<b>AIRT 201</b>	<b>Terminal Air Traffic Control</b>	<p>Students will compose microphone phraseology pertinent to radar and non-radar ATC instructions. Students will distinguish the differences and the relationship between radar positions within a TOWER and an TRACON, including radar handoff procedures.</p>
<b>AIRT 201L</b>	<b>Air Traffic Control Laboratory</b>	<p>Students will distinguish ATC handoff procedures, including coordination between TRACON and control towers. Students will manage simultaneous calls from aircraft, including proper establishment of communication priorities</p>
<b>AIRT 203</b>	<b>Enroute Air Traffic Control</b>	<p>Students will compose microphone phraseology pertinent to radar and non-radar ATC instructions. Students will distinguish the differences and the relationship between radar positions within Air Route Traffic Control Center, including radar handoff procedures.</p>

<b>AIRT 203L</b>	<b>Terminal Radar Approach Control Laboratory</b>	Students will be able to interpret, manipulate, and update en route radar data blocks
		Students will be able to read and interpret flight progress strips and use the data to control and separate aircraft in accordance with FAA Order 7110.65 standards
<b>AIRT 251</b>	<b>Air Traffic Control Team Skills</b>	Students will combine techniques for effective teams in the accomplishment of ATC tasks involving interpersonal coordination, including aircraft handoffs and in-flight emergencies.
		Students will demonstrate mastery of the aeronautical decision making process within a team environment that impacts attitudes and values of team members in teamwork scenarios.
<b>AIRT 253</b>	<b>Work Experience in Air Traffic Control</b>	Employers of Air Traffic Control Work Experience Students will rate the technical skills of their students as above average.
		Employers of Air Traffic Control Work Experience Students will rate the work habits of their students as above average.