

Course Information Form (CIF)

Course Code: AVI 190

Course Title: Advanced Aircraft Systems for Pilots

Department: Aviation

Effective Date: Summer 2026

PCS Code: 1.2 - Occupational/Technical Instruction

CIP Code: 49.0102

Repeatability: 0

Credit Hours

Catalog Notation: 3-0-3

Credit Hour Distribution:

Lecture: 3

Lab: 0

Clinical: 0

Total: 3

General Course Information

Catalog Description

Pilot-oriented study of modern turbine aircraft systems. Familiarizes individuals with turbine and turboprop engines and modern system types and components. Systems knowledge will be applied during examination of a common turbine and turboprop aircraft.

General Course Objectives

To gain an understanding of complex transport aircraft operating characteristics, their engines, and associated systems.

Minimum Placement Levels

English

None

Reading

None

Math

None

Prerequisites

Credit in AVI 184

Methods of Evaluation

2-3 hourly exams, and a final exam. 8-12 homework assignments, 5-8 in-class quizzes.

Instructional Materials and Additional Supplies

The Turbine Pilot's Flight Manual, Brown, Gregory N. and Holt, Mark J. Aviation Supplies and Academics, Inc. 978-1619549197

Transport Category Aircraft Systems, Wild, Thomas. Jeppesen. 978-0884874867

Course Content

General Learning Outcomes (GLOs)

- Critical Thinking and Information Literacy: Students will demonstrate the ability to evaluate perspectives, evidence, and implications, and to locate, assess, and use information effectively.
- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Light Aircraft Systems Review: Physical Properties for Aircraft Systems, Terms, Intro to Jet Propulsion	1. Define terms related to basic aircraft systems. 2. Differentiate properties that apply to aircraft systems. 3. Summarize characteristics of jet propulsion.	2	0	0
Gas Turbine Engines: Configurations, Components, and Subsystems	1. Describe basic configurations and components of a gas turbine engine. 2. Explain gas turbine subsystems and describe how these subsystems interact.	5	0	0
Aircraft Systems: Hydraulics, Fuel, Pneumatics, Pressurization, Air-Conditioning, Landing Gear	1. Explain operating principles of aircraft systems. 2. Diagram system component flow and interconnections.	8	0	0
Flight Control Systems	1. Locate flight control systems. 2. Explain various flight control operations and classify based on function.	1.5	0	0
The Hostile Environment: Oxygen Systems, Fire Warning, Ice and Rain Protection	1. Give examples of the hostile environment in which aircraft fly. 2. Describe operating principles of systems used to combat the hostile environment.	2	0	0
Turboprop Aircraft Engines and Operations	1. Explain how turboprop engines fit into the turbine family. 2. Define turboprop terminology. 3. Discuss how methods of operation differ from other turbine technology.	3.5	0	0
Turboprop Aircraft Systems: Hydraulics, Pneumatics, Fuel, Fire Protection, Air-Conditioning and Pressurization, Landing Gear, Electrical	1. Explain operating principles of turboprop aircraft systems. 2. Diagram system component flow and interconnections.	8	0	0
Turbine Aircraft Engines and Operations	1. Define turbine aircraft engine terminology. 2. Discuss how methods of operation differ from other turbine technology.	2	0	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Turbine Aircraft Systems: Hydraulics, Pneumatics, Air-Conditioning and Pressurization, Flight Control, Electrical, Fuel, Fire Protection, Flight Instrumentation, Warning Systems	1. Explain operating principles of turbine aircraft systems. 2. Diagram system component flow and interconnections.	13	0	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
45	0	0