PARKLAND COLLEGE

Course Information Form (CIF)

Course Code: AVI 218

Course Title: Aircraft Aerodynamics for Pilots

Department: Aviation
PCS Code: 1.2 - Occupational/Technical Instruction
CIP Code: 49.0102
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 3-0-3
Credit Hour Distribution:

Lecture: 3	Lab: 0	Clinical: 0	**Total: 3**

General Course Information

Catalog Description

Capstone class for fundamental aerodynamics of civilian aircraft. Examination of graphical and mathematical models in order to understand current aerodynamic principles. Discussion of how aerodynamic principles apply to normal and abnormal flight situations.

General Course Objectives

- Review fundamentals of aerodynamics as they apply to civilian aviation.
- Understand how these principles can be applied to normal and abnormal aircraft operations.
- Examine graphical and mathematical models to support understanding of aerodynamic fundamentals.

Minimum Placement Levels

English	Reading	Math
None	None	None

Prerequisites

Credit in AVI 200
Approval of department chair

Methods of Evaluation

4-6 in-class quizzes, 8-10 homework assignments to enforce reading assignments. 2-3 hourly exams and final exam.

Instructional Materials and Additional Supplies

Pilot's Handbook of Aeronautical Knowledge, FAA-H-8083-25B, current version. U.S. Department of Transportation, Federal Aviation Administration. https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/phak/

Aerodynamics for Naval Aviators, NAVWEPS 00-80T-80, 1960. The Office of the Chief of Naval Operations Aviation Training Division. https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/00-80T-80.pdf

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.
- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Diagnostic Assessment of Aerodynamic Knowledge and Properties of the Atmosphere	1. Identify relevant properties of the atmosphere and describe their impact on basic aerodynamic principles.	3.5	0	0
Forces of Flight (Lift, Drag, Thrust, Weight)	1. Explain the four basic forces of flight, and illustrate how they change as the aircraft maneuvers.	11.5	0	0
Aerodynamic Examples in Practice	1. Identify principles of aerodynamics.	5	0	0
Stability and Control	1. Characterize design impact on stability and control. 2. Describe how normal operations impact stability and control.	6	0	0
Aircraft Limitations and Impact of Aerodynamics on Performance	1. Use performance charts to determine aircraft performance. 2. Predict general performance outcomes without the use of graphical or mathematical assistance.	5.5	0	0
Applications of Aerodynamics to Flight Operations	1. Explain aerodynamics principles as they apply to both normal and abnormal maneuvering. 2. Discuss how common principles apply across multiple phases of flight.	6.5	0	0
High Speed Aerodynamics	1. Explain how high speed aerodynamics differ from low speed aerodynamics. 2. Illustrate high speed aerodynamics principles using aircraft examples.	3.5	0	0
Modern Design Concepts	1. Identify and define the importance of modern design characteristics as they relate to aerodynamic principles.	3.5	0	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
45	0	0