

Course Code: AVI 116

Course Title: Aviation Physiology

Department: Aviation

Effective Date: Summer 2026

PCS Code: 1.2 - Occupational/Technical Instruction

CIP Code: 49.0102

Repeatability: 0

Credit Hours

Catalog Notation: 4-0-4

Credit Hour Distribution:

Lecture: 4

Lab: 0

Clinical: 0

Total: 4

General Course Information

Catalog Description

Examine aspects of human physiology pertinent to aviation and aerospace operations. Focus on understanding of these physiological factors and the mitigation of their adverse consequences to improve safety and performance in the aerospace environment.

General Course Objectives

To increase student understanding of human physiology as it applies to the flight environment, and to enhance the student's ability to operate safely within the aerospace environment in general.

Minimum Placement Levels

English

None

Reading

None

Math

None

Prerequisites

None

Methods of Evaluation

Evaluation will take place using a combination of 3-4 objective exams, 4-6 quizzes, and 10-15 homework assignments.

Instructional Materials and Additional Supplies

Basic Flight Physiology, current edition, Reinhart, Richard O., M.D. McGraw Hill, NY. NY. 978-0071494885

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.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Atmospheric and Gas Laws	1. Identify and explain characteristics of levels of the atmosphere as they relate to impact on human physiology.	4	0	0
Basic Physiology, Respiration, and Circulation	1. Summarize key aspects of each system; discuss how each system interacts with other body systems.	5	0	0
Hypoxia, Hyperventilation, Smoke, and Fumes	1. Describe the impact of respiratory and circulation problems (such as hypoxia, hyperventilation, smoke, and fumes) on the body. 2. Explain how these respiratory and circulation problems can be solved in flight.	5	0	0
Trapped Gas and Evolved Gas	1. Describe the impact of trapped gas and evolved gas problems on the body. 2. Explain how trapped gas and evolved gas problems can be solved while in flight.	5	0	0
Cabin Pressurization, Decompression, Oxygen Systems	1. Define and diagram components of a basic pressurization system and explain how it functions in flight. 2. Describe the different oxygen systems that might be found in general aviation aircraft and explain basic operating principles.	5	0	0
Vision and Visual Illusions	1. Identify key elements of vision that are impacted by the flight environment. 2. Explain how visual illusions might manifest, and outline steps to resolve illusions in flight.	5	0	0
Spatial Disorientation	1. Identify key elements of spatial orientation that are impacted by the flight environment. 2. Explain how spatial disorientation might manifest, and outline steps to resolve disorientation in flight.	4	0	0
Noise and Vibration	1. Give examples of noise and vibrations that occur in flight and characterize how these disturbances impact physiology in flight.	2	0	0
Acceleration	1. Generalize how acceleration impacts the body in flight and what methods are available to control the impact of acceleration.	3	0	0
Fatigue	1. Define fatigue and explain the sources and impacts on the pilot in flight. 2. Explain how to choose fatigue mitigation techniques.	4	0	0
Mission-Imposed Stresses	1. Give examples of mission-imposed stresses, stress coping techniques, and stress mitigation factors. 2. Predict situations where mission-imposed stress is likely to occur.	5	0	0
Self-Imposed Stresses	1. Give examples of self-imposed stresses, stress coping techniques, and stress mitigation factors. 2. Predict situations where self-imposed stress is likely to occur.	5	0	0
Crash, Survival, and Escape	1. Describe and explain factors relating to post-crash escape and survival. 2. Evaluate crash scenarios for survivability.	3	0	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Situation Awareness	1. Explain situation awareness and its importance to safe flight. 2. Evaluate situations that could lead to loss of situation awareness and assess for mitigation options.	3	0	0
Space Biology	1. Identify unique physiological challenges to flight outside of the atmosphere.	2	0	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
60	0	0