



## **Course Description**

### **ASC2470 | Physiology-Psychology of Flight | 3.00 credits**

This is an introductory course in the physiology and psychology of flight. Students will learn aero-medical facts of significance to pilots, including causes, symptoms, prevention and emergency treatment of ailments common to the aviation environment through a basic understanding of a person's normal functioning. Cabin pressurization, communications, decompression sickness, hyperventilation, hypoxia, self-imposed stresses, spatial disorientation and vision are examined.

### **Course Competencies:**

**Competency 1:** The student will demonstrate knowledge and understanding of the physiology of flight by:

1. Describing the atmosphere and the impact of the atmosphere upon the human body
2. Defining various physical laws such as Boyle's law, Charles' law, Graham's law, Henry's law, and Dalton's law
3. Explaining the respiration and circulation processes in the human body
4. Identifying the causes, symptoms, prevention, and treatment of various forms of hypoxia
5. Pointing out the causes, symptoms, prevention, and treatment of hyperventilation
6. Recalling the causes, symptoms, prevention, and treatment of "decompression sickness"
7. Differentiating the benefits and problems associated with cabin pressurization
8. Analyzing the human visual system and its limitations (including visual illusions)
9. Breaking down the effects of noise in the aviation environment, including communications
10. Summarizing the effects of specific self-imposed stresses (such as alcohol, drugs, and fatigue) on flight safety and pilot performance
11. Explaining the importance of the maintenance of proper physical fitness

**Competency 2:** The student will demonstrate knowledge and understanding of the physiology of flight by:

1. Discussing the unerring decision-making process, including the idealized aeronautical decision-making (ADM) or problem-solving process
2. Summarizing the flawed decision-making process.
3. Explaining the impact of leadership, attitude, and motivation on safety
4. Analyzing training and training devices, their importance, and use to improve pilots' ADM
5. Describing the impact of stress and other mental ailments on aviation safety
6. Describing human error; listing its sources and classification methods and meeting the challenge of human error in the cockpit
7. Naming the elements of risk management in aviation operations

**Competency 3:** The student will produce reasoned, critical responses to common concerns in aviation physiology and psychology by:

1. Examining actual accident reports from the department of transportation and providing a class presentation and written report outlining the causes and various ways the assigned accident could have been prevented
2. Analyzing the physiological and psychological factors affecting the student (self-analysis) before a flight in a comprehensive manner will allow the student to make a competent go/no-go decision as a pilot in command

### **Learning Outcome:**

- Communicate effectively using listening, speaking, reading, and writing skills
- Solve problems using critical and creative thinking and scientific reasoning
- Formulate strategies to locate, evaluate, and apply information