

## **Course Description**

### **ASC2670 | Aircraft Systems | 3.00 credits**

As preparation for commercial aviation requirements, this course is concerned with a detailed study of aircraft systems, their various sources of basic power and the functional application of mechanisms operated by these systems. Prerequisite: ASC1610.

### **Course Competencies:**

**Competency 1:** The student will demonstrate knowledge and understanding of aircraft systems by:

1. Distinguishing between different transport category aircraft models, including the B727, B737, DC-10, DC-9, and MD-80
2. Explaining transport category aircraft auxiliary power units (APU) systems, pneumatic systems, and environmental control systems
3. Breaking down transport category aircraft anti-icing systems and rain protection systems and the critical role each system plays in the safe operation of the aircraft in instrument or icing conditions
4. Analyzing transport category aircraft electrical power systems and the various roles of the electric system, redundancy features, and basic operational principles
5. Understanding the different types of transport category aircraft flight control systems (manual control cables, hydraulic systems, and fly-by-wire systems)
6. Discussing transport category aircraft fuel systems, including design features, major components, and operational knowledge
7. Explaining transport category aircraft hydraulic systems and the critical role they play in the safe operation of the aircraft
8. Summarizing transport category aircraft crew and passenger oxygen systems and the critical role they play in the safe operation. Of the aircraft at high altitudes
9. Explaining transport category aircraft warning and fire protection systems and the critical role they play in the safe operation of the aircraft by the pilots and crew
10. Identifying transport category aircraft communication, instrumentation, and navigational systems and the critical role each system plays in the safe operation of the aircraft by the pilots and crew
11. Discussing miscellaneous systems found in transport category aircraft and their purpose

**Competency 2:** The student will analyze and discuss the importance of aircraft systems knowledge by:

1. Normal aircraft operations
2. Trainee programming

**Competency 3:** The student will analyze and discuss the importance of aircraft systems knowledge in the following situations by:

1. Normal aircraft operation
2. Training programs
3. Emergency situations
4. Abnormal situations

### **Learning Outcome:**

- Solve problems using critical and creative thinking and scientific reasoning
- Formulate strategies to locate, evaluate, and apply information