



Course Description

AVM1161 | Aircraft Performance Measures and Maintenance Requirements | 3.00 credits

Students will learn aircraft performance measures and maintenance requirements for airplanes powered by reciprocating, turboprop, and/or jet turbine and turbofan engines. Topics include stability and control, weight and balance, performance charts and graphs, takeoff and cruise control, airplane performance characteristics, from which they will extract data that maximizes performance.

Course Competencies:

Competency 1: The student will learn the basic engineering and mechanical components of aircraft engines by:

1. Identifying the engineering components, parts, and functions of aircraft engines
2. Identify the engineering component differences between prop, turboprop, and jet engine
3. Identify the mechanical and operational impacts that affect fuel consumption and performance
4. Determining the measurement standards to chart and record engine performance and efficiency values

Competency 2: The student will learn about the essential maintenance requirements of aircraft engines and the impacts that an effective maintenance program has on engine performance by:

1. Identifying the concepts of cyclical, preventive, schedule, and routine maintenance programs and their impacts on maximizing engine performance
2. Identifying engine maintenance requirements and their impacts on fuel efficiency and life cycle durability
3. Identifying the requirements, mandated by national or international regulatory agencies, for record keeping of maintenance data
4. Identifying the impacts of maintenance actions on an engine's operational availability (OA) and identifying the operational cost efficiencies developed from such programs

Competency 3: The student will learn the impact that atmospheric conditions have on aircraft engine performance by:

1. Identifying atmospheric conditions and analyzing their impacts on airspace, safety, and aircraft engine
2. Performance
3. Identifying atmospheric conditions and assessing their impacts on engine performance during takeoff, climb, cruise, descent, and landing
4. Identifying the essential principles of the study of meteorology and the various impacts it has on weather and atmospheric conditions
5. Identifying the required documentation and record information that must be maintained about atmospheric conditions for commercial aircraft

Competency 4: The student will learn the impact of weight control, balance, and load control on the aircraft's performance levels and operational safety limitations by:

1. Identifying the methodologies to determine weight and balance calculations before aircraft takeoff
2. Determining the interactions between flight personnel and maintenance personnel and the impacts these roles and interactions have on engine performance
3. Identifying the national and international regulatory requirements applicable to commercial aircraft dispatch protocols
4. Identifying the engineering and aerodynamic impacts of hydraulic components and their impact on the performance of aircraft engines

Competency 5: The student will examine current trends in computer crime by:

1. Identifying commercialization as a big influence on cybercrime
2. Explaining how integration is used in the commission of cybercrime
3. Discussing how the involvement of juveniles is impacting criminal justice policy and procedures
4. Exploring the cybercriminal organization and the cross-border nature of computer crime
5. Researching how violation of an individual's privacy by the state impacts usage

Competency 6: The student will demonstrate knowledge of the investigation, prosecution, and sentencing of computer crimes by:

1. Examining search and seizure requirements and procedures
2. Identifying proper procedures for analyzing and presenting digital evidence
3. Explaining the jurisdiction and extradition policy and procedure
4. Reviewing significant cases
5. Evaluating the effectiveness of prosecuting cybercrime
6. Examining sentencing policies

Competency 7: The student will examine the future of computer crime by:

1. Exploring future techniques of prevention
2. Exploring future issues in the control of computer crime
3. Discussing legislative efforts
4. Explaining international cooperation

Learning Outcomes:

- Communicate effectively using listening, speaking, reading, and writing skills
- Use quantitative analytical skills to evaluate and process numerical data
- Solve problems using critical and creative thinking and scientific reasoning