Course Description

AVM1160 |Aviation Maintenance Programs and Inspections | 3.00 credits

This course provides an in-depth study of aircraft inspection programs and maintenance scheduling procedures. Students will learn national and international regulations governing aircraft inspection, maintenance evaluation, and the required procedures to update airline and governmental maintenance technical manuals.

Course Competencies:

Competency 1: The student will learn the national and international regulatory requirements for maintaining commercial aircraft by:

1. Identifying the national and international regulations applicable to commercial aircraft maintenance
2. Identifying the regulatory criteria for determining the airworthiness of commercial aircraft
3. Identifying the aircraft maintenance records required to be maintained, including content, format, and archiving requirements
4. Identifying the regulatory inspection process and its impact on operational procedures for commercial aircraft
5. Identifying procedures to update airline and governmental maintenance technical manuals

Competency 2: The student will learn the principles of establishing an effective and efficient aviation maintenance program by:

1. Identifying aircraft inspection criteria, including chronological and cycle-based inspections
2. Identifying aircraft system and component reliability characteristics and their roles in the development of an effective maintenance program
3. Identifying the advantages of non-destructive inspections and procedures to determine the needs of aircraft component maintenance requirements
4. Identifying the concept of a Comprehensive Maintenance Management Program (CMMP)
5. Identifying the principles of predictive versus reactive approaches to aircraft maintenance intervals

Competency 3: The student will learn the principles of establishing an effective maintenance program through identifying appropriate personnel staffing, job functions, and work responsibilities by:

1. Analyzing the workforce required to operate an effective aviation maintenance program
2. Identifying the personnel requirements and qualifications needed for an effective aviation maintenance program
3. Determining effective testing protocols for hiring new personnel or advancing personnel in aviation maintenance programs
4. Identifying comprehensive job descriptions, including initial training, continuing education requirements, and updated training sessions for all maintenance personnel
5. Identifying the concept of the maintenance safety team and its role in highlighting maintenance problems

Competency 4: The student will demonstrate knowledge of the financial benefits of an effective aviation maintenance program by:

1. Analyzing the financial impacts of the life cycle duration of aircraft parts and engine components
2. Identifying the facilities and equipment required to conduct aviation maintenance programs efficiently
3. Identifying the benefits of programmed maintenance schedules, which minimize the financial impact of aircraft downtime
4. Determining the cost-effectiveness of implementing maintenance training programs and aircraft

manufacturer update seminars to maintain an educated workforce
5. Determining the content of pre-flight, post-flight, cycles, annual, and progressive inspections and their effectiveness in identifying maintenance problems in aircraft components

<u>Learning Outcomes:</u>
- 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