

Course Description:

Covering the requirements of airworthiness authorities and auditing programs, this course is designed to provide the participants with the fundamental principles, knowledge, and engineering expertise required to model, predict, and evaluate aircraft systems' reliability and implement a reliability program for maintaining an effective and airworthy maintenance program. After completion of the course, the participants will be able to:

- ✈ Demonstrate an in-depth understanding of the fundamental concepts, principles, and process knowledge of reliability engineering and surveillance program
- ✈ Implement a proper reliability program for maintaining an effective maintenance program
- ✈ Employ appropriate reliability techniques and methods to identify and protect against dominating failure modes
- ✈ Apply parametric and non-parametric techniques to analyze failure data, select proper models, estimate relevant model parameters, and predict the failure patterns
- ✈ Apply a basic Failure mode effect and consequence analysis,
- ✈ Analyze the failure behavior of a typical aircraft multi-unit system
- ✈ Assess related risks of a failure,
- ✈ Define the building blocks of an airline reliability program within CAMO and associated tasks

✈ Design and plan for implementation of an effective reliability program

✈ Establishing a proper reliability review board, and setting a decision making system

✈ Acquire understanding about Failure Reporting Analysis and Corrective Action System

✈ Gain knowledge about the fundamentals of equipment warranty and warranty claim

The students will work on a number of extended group projects, case studies, and individual exercises and assignments to strengthen their understanding of each topic. The student needs to give a group presentation in order to receive comments and suggestions for improvement from the other students. Students will receive constructive feedback and guidance from their teachers on their individual assignments. It is expected that students will interact for the purpose of solving a problem, explaining, analyzing, or identifying a feature of the subject.

Target Audience:

✈ CAMO engineers involved in the development of maintenance program and modification analysis

✈ Maintenance planners and controllers

✈ Maintenance & engineering superintendents involved in the hangar and line operations

✈ Quality Assurance and safety engineers involved in the auditing program and standardization

✈ Reliability programs managers and analysts

✈ Logistic analyst and inventory superintendent

The Main Topics:

1. Reliability program and regulatory requirements
2. Overview of Maintenance policies and classification within MSG-3
3. Introduction to Engine performance and Condition Trend Monitoring
4. system performance Assessment
5. Non-parametric approaches for analyzing aircraft reliability data
6. Reliability life data analysis- aircraft units
7. Reliability analysis of aircraft retables and repairable units
8. Risk Analysis in maintenance engineering
9. Overview of warranty modeling and management
10. Structure of Airline Maintenance Reliability Program
11. Reliability-based decision making for Maintenance program

Instructor:

Dr. Alireza Ahmadi

Course Duration

32 hours

Prerequisites

- Prior knowledge of basic Probability theory and statistics and Calculus at the bachelor's level.
- Basic Experience with Aircraft maintenance engineering and management

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