

## **SAE Aerospace Fiber Optic Technician/QA Course**

Available to U.S. Military and civilian personnel

**COURSE OVERVIEW:** Our SAE Aerospace Fiber Optic Fabricator course is based on the SAE ARP5062/1 thru APR5062/8 training requirements as well as incorporating elements of the NEC (National Electrical Code) and the ANSI/TIA (American National Standards Institute/Telecommunications Industry Association). This is a 5-day course that can be taught at our training facility or on-site at the customer's location. We also offer the Electronics Technician Association (ETA) certification for the SAE Aerospace Fiber Optic Fabricator training course.

**WHO SHOULD ATTEND:** Our course is designed for those aviation students who will be installing and maintaining fiber optic cable harnesses on commercial and military aircraft. After completing this course, each student will be able to successfully install, test and troubleshoot fiber optic cables and systems onboard aircraft. Students will become proficient in the termination processes for a variety of connectors used in the commercial aviation sector as well as the military aerospace program.

### **COURSE OUTLINE**

#### **DAY ONE: THE PHYSICAL LAYER**

Lecture Subjects:

Introduction to Aerospace Fiber Optics  
Principles of Fiber Optic Transmission  
Safety Awareness  
Basic Principles of Light  
Optical Fiber Construction and Theory  
Optical Fiber Characteristics  
Fiber Optic Sources  
Aerospace Fiber Optic Cables (Unterminated)  
Aerospace Fiber Optic Interconnects (Unterminated)  
Homework Assignment

#### **DAY TWO: HANDS ON LAB**

Review Homework Assignment  
Lecture Subjects (Cont'd)  
Connector Assembly  
Harness Assembly  
Labeling  
Test and Inspection Equipment  
Test Methods and Application  
Demo: Assembly of ST Connector  
Lab: Student Build 3 ST-to-ST Cable Assemblies  
Demo: Polishing and Inspection Procedures for ST  
Lab: Student Polish and Inspect ST-to-ST cable assembly Connectors  
Demo: Cable Link Loss Testing  
Lab: Student Perform Cable Link-Loss Testing Procedures on 3 Cable Assemblies  
Homework Assignment

#### **DAY THREE: HANDS ON LAB/TESTING**

Review Homework Assignment  
Demo: Assembly of LC Connector  
Lab: Student Assemble, Polish, and Perform Link-Loss Testing on LC-to-ST cable assembly  
Demo: M29504/4 and M29504/5 Termini Build Procedure

Lab: Student Build 2 ST-to-M29504/4 (Pin) and 2 ST-to M29504/5 (Socket) Cable Assemblies  
Demo: Multi-Terminus Insertion/Extraction Procedures  
Lab: Student Insert M29504/4 and M29504/5 Termini into Plug and Receptacle M38999 Connectors  
Homework Assignment

#### **DAY FOUR: BUILD MULTI-TERMINIS CONNECTOR**

Review Homework Assignment

Lab: If Necessary, Continue with Day Three Termini Builds

Demo: Multi-Terminus Inspection and Cleaning Procedures with Hand Held Video Probe.

Lab: Student Inspect and Clean D38999 Multi-Terminus Connector/Termini

Demo: D38999 Multi-Terminus Link-Loss Testing Procedures

Lab: Student Perform Multi-Terminus Link-Loss Testing for M38999 Plug and Receptacle

Homework Assignment

#### **DAY FIVE: OTDR/TESTING/EXAMS**

Review Homework Assignment

Lecture: Optical Time Domain Reflectometer (OTDR)

Demo: OTDR Setup and Operation

Lab: Students Perform Fiber Optic Plant Troubleshooting

Review: ETA SAE Exam Review

Exam: ETA Exam Administered