



*Mobile Training & Education Inc*

**"Anytime, Anywhere Training at its BEST"**

## **Avionics**

### **CATALOG DESCRIPTION:**

In this 60 hour course students will learn the theory and principals of airborne communication and navigation systems, plus the latest spaced-based avionics. Systems covered include navcom, transponder, VOR, ADF, DME, TACAN, instruments, radar, autopilot, collision avoidance and enhanced ground proximity warning.

### **COURSE OBJECTIVE:**

To introduce students to Avionics Technologies. Student will develop an understanding of the principles and theory of airborne navigation and communication systems, to include the history of flying instruments and avionics radio, and the beginnings of the National Airspace System. Also covered are the principles of navigation as well as the organization of Regulatory and Advisory Agencies of the National Airspace System. Upon successful completion of this course the students will be able to pass the ETA (Electronics Technicians Association) Avionics examination.

### **COURSE LEARNING OUTCOMES:**

Upon completion of the course the students should understand:

- Non Directional Beacons
- Direction Finding Receivers
- Automatic Direction Finding
- Errors in Direction Finding
- Static Dischargers
- VHF Omni Range
- Signal Integrity
- Errors in VOR Navigation
- Doppler VOR
- VOR Ground Station
- VOR Receiver
- VOR Test Equipment
- Distance Measuring Equipment
- DME Ground Station
- TACAN
- Long Range Navigation
- Global Positioning System
- GPS Clocks
- Earth Model
- Space Vehicle
- GPS Signals
- Generating PRN Codes
- Precision Position Service
- Navigation Message
- Relationship between GPS Frequencies
- Monitor and Control Stations
- GLONASS
- Selective Availability

- Ionospheric Propagation Delay
- Differential GPS
- Signal Integrity Monitoring
- GPS Signals in Space
- GPS Receivers.
- GPS Accuracy
- GPS Navigation
- Improved GPS for Civilian Use
- Free Flight
- Primary Radar
- Secondary Radar
- Replies
- Mode C
- Mode-S System
- Mode S Interrogations
- Mode S Selective Calls
- Mode S Replies--Diversity
- ATCRBS Transponder
- Mode S Transponder.
- Collision Avoidance
- Lightning Detection Equipment
- Weather Radar
- VHF AM Communication
- VHF Communications Hardware
- High Frequency Communications
- ACARS
- SELCAL
- ELT
- Digital Communications and Networking
- VHF Digital Communications
- Datalink Mode S
- Microphones
- Digital Communications
- Transmission Lines
- ARINC 429, 629
- MIL STD 1553
- Commercial Standard Digital Bus
- ARINC 573, 615, 708 and other data buses
- Fiber Optic Data Communication
- Glass Fiber as a Transmission Line
- Time Domain Reflectometry
- Gyroscope
- Synchros
- Flux Gate Compass
- RMI
- HIS
- Attitude Direction Indicator
- Electronic Displays
- Display Technologies
- Display Systems
- Instrument Placement
- Head Up Display

- Atmospheric Temperature
- Atmospheric Pressure
- Air Speed
- Temperature
- Sensors
- Pitot and Static Systems
- Angle of Attack Indicator
- Air Data Computer System
- Control Systems Servo Motors
- Flight Control System Modes
- FCS Control Panel
- Aircraft Dynamic
- Yaw Damper
- Fly By Wire
- Inertial Navigation
- Accelerometers
- Optical Gyros
- Power Sources
- Avionics According to DO-160
- HIRF
- Electromagnetic Compatibility
- Line Replaceable Unit
- ARINC Style Equipment
- Fault Tolerance
- Computer Architecture