



BROWARD COMMUNITY COLLEGE COURSE OUTLINE

LAST REVIEW: 2004-2005 **NEXT REVIEW: 2009-2010** **STATUS: A**

COURSE TITLE: Avionics Installer

COMMON COURSE NUMBER: AVS 0091C

CREDIT HOURS: 3.75

CONTACT HOUR BREAKDOWN

(per 16 week term)

CLOCK HOURS: 180

(Voc. Course ONLY)

Lecture: 180

Lab:

Clinic:

Other:

PREREQUISITE(S): Airframe & Powerplant training, Electronics training, previous experience

COREQUISITE(S):

PRE/COREQUISITE(S):

COURSE DESCRIPTION: *(750 characters, maximum)*

The purpose of this program is to prepare students for employment radio mechanics (85514608) and as avionics technicians (823.281-010). The course content includes, but is not limited to, troubleshooting, repair and installation of airborne radio communications, radio navigation and radar equipment systems in accordance with regulatory and industry standards. Also included is instruction in basics of AM and FM transmitters and receivers and avionics equipment. Skills preparation for passing licensing/certification tests required by industry forms an integral part of the curriculum.

UNIT TITLES

- 1. Aircraft Electrical Systems and Ground Safety**
- 2. Maintenance of Airborne Communication Systems**
- 3. Installing Avionic Systems**
- 4. Calibration of Test Equipment**



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UNITS

Unit 1 Aircraft Electrical Systems and Ground Safety

General Outcome:

1.0 The student shall:

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 1.1 Define standard aircraft bus voltage.
- 1.2 Analyze aircraft electrical power generation and charging systems.
- 1.3 Analyze aircraft electrical power control and distribution systems.
- 1.4 Analyze aircraft electrical warning systems.
- 1.5 Analyze aircraft ground handling safety.
- 1.6 Describe and practice aircraft ground handling safety procedures pertaining to avionics maintenance.



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Unit 2 Maintenance of Airborne Communication Systems

General Outcome:

2.0 The student shall:

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 2.1 Describe theory of operation of air to ground communication systems.
- 2.2 Determine serviceability through performance checks of avionics communication systems.
- 2.3 Troubleshoot to the component/module level malfunctioning communication systems/equipment.
- 2.4 Repair and return to service air to ground communication systems/equipment.
- 2.5 Analyze and troubleshoot communication transmitter switching and audio distribution circuits and equipment.
- 2.6 Describe the theory of operation of emergency locator transmitters (ELTs).
- 2.7 Perform preventative and regulatory maintenance and performance tests of ELTs.
- 2.8 Troubleshoot defective ELTs, repair and return to service.



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Unit 3 Installing Avionic Systems

General Outcome:

3.0 The student shall:

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 3.1** Draw an interconnecting diagram and interconnect an IFR Avionics system for a single engine or light twin aircraft using acceptable methods, techniques and practices.
- 3.2** Determine proper placement of the various antennas required for an IFR Avionics package on a light twin or single engine aircraft.
- 3.3** Describe the effects of precipitation static on aircraft radios and standard methods of reduction.
- 3.4** Compute the dimensions of an ADF Sense antenna for a typical installation.
- 3.5** Apply the formula for weight and balance computation.



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Unit 4 Calibration of Test Equipment

General Outcome:

4.0 The student shall:

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 4.1 Describe the regulatory requirements for repair station test equipment calibration.
- 4.2 Calibrate frequency counters/meters.
- 4.3 Calibrate general-purpose multimeters.
- 4.4 Calibrate RF voltmeters.
- 4.5 Calibrate RF powermeters, wattmeters, loads and attenuators.
- 4.6 Calibrate audio signal generators and power meters.
- 4.7 Calibrate oscilloscopes.
- 4.8 Calibrate power supplies.
- 4.9 Calibrate RF signal generators.
- 4.10 Calibrate special purpose test sets normally used in an Avionics Repair Station.