

# 2025-2026 TTC Catalog - Avionics Technology (AVT)

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## **AVT 101 - Basic Electricity for Avionics**

**Lec:** 3.0 **Lab:** 3.0 **Credit:** 4.0

### **Course Offered**

Fall

This course introduces the basic theories and applications of electricity. Students will construct and analyze both DC and AC circuits using electrical measuring instruments and the interpretation of electrical circuit diagrams, including Ohm's and Kirchhoff's laws.

### **Prerequisite**

MAT 101

or

MAT 155

or

appropriate test score

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **AVT 105 - Aircraft Electricity for Avionics**

**Lec:** 3.0 **Lab:** 3.0 **Credit:** 4.0

### **Course Offered**

Fall

Spring

This course is a study of the operation and maintenance of various electrically operated aircraft systems. Topics include batteries, generators, alternators, inverters, DC and AC motors, position indicating and warning systems, fire detection, and extinguishing systems and anti-skid brakes.

### **Prerequisite**

AVT 115

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **AVT 110 - Aircraft Electronic Circuits**

**Lec:** 3.0 **Lab:** 3.0 **Credit:** 4.0

### **Course Offered**

Fall

This course is a study of aircraft electronic circuits. Students will examine and construct basic analog electronic circuits and solve solid state device problems. Course work also includes the analysis, construction, testing and troubleshooting of analog circuits.

### **Prerequisite**

AVT 101

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **AVT 115 - Aircraft Digital Circuits**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

### **Course Offered**

Fall

This course emphasizes analysis, construction and troubleshooting of digital logic gate circuits and integrated circuits. Topics include number systems, basic logic gates, Boolean algebra, logic optimization, flip-flops, counters and registers. Circuits are modeled, constructed and tested.

### **Prerequisite**

AVT 110

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **AVT 120 - Aviation Electronic Communications**

**Lec:** 3.0 **Lab:** 3.0 **Credit:** 4.0

### **Course Offered**

Spring

This course includes application of electrical theory and analysis techniques to the study of aircraft transmitters and receivers, with an emphasis on mixers, IF amplifiers and detectors. Some basic FCC rules and regulations also are covered.

### **Prerequisite**

AVT 140

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **AVT 125 - Aviation Data Communications**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

### **Course Offered**

Spring

This course emphasizes the techniques for sending and receiving information through space. Topics include media characteristics, modulation and demodulation, signal conversions, multiplexing and demultiplexing, protocols, industry standards, networks, and error detection and correction techniques.

### **Prerequisite**

AVT 120

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **AVT 140 - Avionics Standard Practices**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

### **Course Offered**

Spring

This course introduces the student to electrical cables, wiring maintenance, harness fabrication, and aircraft wiring installation practices. Topics include the use of electrical tools such as soldering equipment and aircraft grade cable fabrication and testing equipment.

### **Prerequisite**

AVT 105

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **AVT 145 - Avionics Circuit Repair**

**Lec:** 1.5 **Lab:** 4.5 **Credit:** 3.0

### **Course Offered**

Fall

This course develops the skills necessary to repair printed circuit boards. Topics include detailed drawings, chassis layout, drilling, reaming, punching, cutting, bending of metals, printed board circuit fabrication, wiring, soldering, harness and cable fabrication.

**Prerequisite**

AVT 115

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **AVT 150 - Aircraft Navigation Systems**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

**Course Offered**

Fall

Summer

This course covers the theory and maintenance of airborne Very High Frequency (VHF) navigation equipment, including VHF Omni-directional Range (VOR) receivers, instrument landing system (ILS) equipment, long-range navigation systems, inertial navigation systems and Global Positioning Systems.

**Prerequisite**

AVT 115

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **AVT 155 - Aircraft Pulse Systems**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

**Course Offered**

Fall

Summer

This course covers the operation and maintenance of air traffic control transponders and distance measuring equipment, including encoding, decoding pulse transmission, signal reception and processing.

**Prerequisite**

AVT 150

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **AVT 160 - Aircraft Radar Systems**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

### **Course Offered**

Fall

Summer

This course will apply the principles of pulse and microwave circuits typically applied to search and weather radar. Students will learn to operate and maintain weather radar and radar altimeter systems. Topics include timing, transmitter, modulator, receiver, signal processing and display circuits.

### **Prerequisite**

AVT 155

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **AVT 165 - Avionics General Regulations**

**Lec:** 2.0 **Lab:** 0 **Credit:** 2.0

### **Course Offered**

Spring

This course introduces FAA and FCC regulations that pertain to avionics technicians and the maintenance of aircraft and avionics components. Topics also include technical standard orders, manufacturers' maintenance and parts manuals, service letters, bulletins and instructions.

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **AVT 170 - Avionics Program and Test Review**

**Lec:** 1.0 **Lab:** 0 **Credit:** 1.0

### **Course Offered**

Fall

Summer

This course prepares students for the FCC (Federal Communications Commission) General Radio-Telephone License Examination and NCATT (National Center for Aviation Technician Training) AET (Aircraft Electronics Technician) written exam.

All AVT courses

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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