2018-2019 TTC Catalog - Avionics Technology (AVT)

AVT 101 - Basic Electricity for Avionics

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

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: Aeronautical Studies

AVT 105 - Aircraft Electricity for Avionics

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

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: Aeronautical Studies

AVT 110 - Aircraft Electronic Circuits

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

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: Aeronautical Studies

AVT 115 - Aircraft Digital Circuits

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

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: Aeronautical Studies

AVT 120 - Aviation Electronic Communications

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

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: Aeronautical Studies

AVT 125 - Aviation Data Communications

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

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: Aeronautical Studies

AVT 140 - Avionics Standard Practices

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

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: Aeronautical Studies

AVT 145 - Avionics Circuit Repair

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

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: Aeronautical Studies

AVT 150 - Aircraft Navigation Systems

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

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: Aeronautical Studies

AVT 155 - Aircraft Pulse Systems

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

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: Aeronautical Studies

AVT 160 - Aircraft Radar Systems

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

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: Aeronautical Studies

AVT 165 - Avionics General Regulations

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

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: Aeronautical Studies

AVT 170 - Avionics Program and Test Review

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

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: Aeronautical Studies
