Courses

RCET 0141 Applied Mathematics I: 4 semester hours.
Basic math as it applies to Electrical Theory; includes algebraic and trigonometric topics as they relate to DC and AC (sine wave) circuit analysis. F, S

RCET 0142 Applied Mathematics II: 4 semester hours.
Continuation of math concepts taught in RCET 0153A and RCET 0153B. Emphasizes understanding of algebraic and trigonometric topics as related to DC and AC (sine wave) circuit analysis with special emphasis on trigonometric solution and vector analysis. PREREQ: RCET 0153B. F, S

RCET 0153 Electronic Theory: 5 semester hours.
Fundamentals of DC and AC electronics: safety, soldering, electrical units, Ohm's Law, series and parallel resistive circuits, voltage and current, meters, network theorems, magnetism, inductors, capacitors, AC-DC network analysis, and power supplies. COREQ: RCET 0141 and RCET 0155. F, S

RCET 0153A Basic Electricity and DC Circuit Theory: 4 semester hours.
The fundamental principles of basic electricity and DC circuit theory will be covered. Topics covered will include related technical math, safety procedures, components, and the principles of electrical circuit analysis including voltage, current, resistance, and related laws. COREQ: RCET 0153B. F, S

RCET 0153B Basic Electricity and AC Circuit Theory: 4 semester hours.
Introduction to the theoretical and mathematical principles applied to basic reactive (electrostatic and electromagnetic) components, and alternating current circuits. Includes algebraic and trigonometric analysis of passive high pass, low pass, resonant filter networks, and rectifying circuits. PRE-or-COREQ: RCET 0153A. COREQ: RCET 0155B. F, S

RCET 0154 Electronic Control Devices Theory: 5 semester hours.
Comprehensive study of semiconductors, power supplies, transistor amplifiers, and operational amplifiers. Digital fundamentals including logic gates, Boolean algebra, combination logic circuits, digital registers, counters, and timing circuits. PREREQ: RCET 0153B and RCET 0155B. COREQ: RCET 0156 and RCET 0142. F, S

RCET 0155 Electronic Lab: 5 semester hours.
Experiments involving subjects covered in RCET 0153. Students will construct, measure, and analyze circuits. COREQ: RCET 0153. F, S

RCET 0155A Basic Electricity and DC Circuit Lab: 2 semester hours.
Students will construct, analyze, predict and measure DC circuits while selecting and using appropriate test equipment. Project reports require design concepts, theoretical application, and demonstration of principles and practices learned in math, theory and laboratory. Students will learn to adhere to safe work practices. COREQ: RCET 0155B. F, S

RCET 0155B Basic Electricity and AC Circuit Lab: 3 semester hours.
Emphasizes understanding of alternating current circuitry covered in RCET 0153B, by allowing students to design, construct, test, and troubleshoot using proper test equipment. PRE-or-COREQ: RCET 0155A. COREQ: RCET 0153B. F, S

RCET 0156 Electronic Control Devices Lab: 5 semester hours.
Experiments involving subjects covered in RCET 0154. Students will construct, measure, and analyze circuits. PREREQ: RCET 0153B and RCET 0155B. COREQ: RCET 0154. F, S

RCET 0199 Experimental Course: 1-6 semester hours.
This is an experimental course. The course title and number of credits are announced in the class schedule by the scheduling department. Experimental courses may be offered no more than three times with the same title and content.

RCET 0201 Systems Analog and Digital Theory: 7 semester hours.
Analog circuit analysis applied to amplifiers, power supplies, op-amps, and discrete switching circuits, with an emphasis on frequency limitations of discreet components and circuitry. Introduction to actuator, motor, and transducer control circuitry. COREQ: RCET 0253. F, S

RCET 0203 Systems Analog and Digital Laboratory: 5 semester hours.
Emphasizes understanding of analog and digital circuitry by allowing students to design, construct, test, and troubleshoot using proper test equipment. Experiments involve subjects covered in RCET 0251 and RCET 0271. PREREQ: RCET 0156. COREQ: RCET 0251. F, S

RCET 0204 Introductory Calculus: 4 semester hours.
Correlations of algebraic, trigonometric and geographic topics as well as logarithms and their applications. Algebraic calculus concepts involving differentiation and integration and their applications to electronic circuits and waveform analysis. Supports RCET 0251. PREREQ: RCET 0142 or equivalent. F, S

RCET 0205 Computer Fundamentals and Introduction to Programming: 4 semester hours.
Basic computer components and functions. Introduction to operating system file structures. Introduction to and use of element-driven programming languages and integrated development environments. F, S

RCET 0206 Radio Frequency Transmission Theory: 7 semester hours.
Theory, analysis, and design of devices operating in the radio frequency spectrum. Fundamentals involving the phenomena of radio waves from audio frequencies through light rays. PREREQ: RCET 0251, RCET 0253, and RCET 0264. COREQ: RCET 0268. F, S

RCET 0207 Radio Frequency Transmission Lab: 5 semester hours.
Maintenance, design, and adjustment of RF oscillators, amplifiers, AM, FM and single sideband, mobile and fixed station transmitters; transmission lines and antennas; microwave transmitters and measurement techniques. PREREQ: RCET 0251, RCET 0253, and RCET 0264. COREQ: RCET 0267. F, S

RCET 0208 Electronic Drafting: 2 semester hours.
Computer aided drafting with emphasis on schematic capture with component information systems and printed circuit board layout. F, S

RCET 0209 Introduction to Lab Simulation Software: 2 semester hours.
Introduction to lab simulation software environments used to build data acquisition and instrument control applications. F, S

RCET 0209 Independent Study: 1-8 semester hours.
Addresses specific learning needs of individuals for the enhancement of knowledge and skills within the program area under the guidance of an instructor. May be repeated. Graded S/U; may be letter graded. PREREQ: Permission of instructor. D

RCET 0209 Special Topics: 1-8 semester hours.
Addresses the specific needs of industry, enabling students to upgrade technical skills that are not included in the current program curriculum. May be repeated. Graded S/U; may be letter graded. PREREQ: Permission of instructor. D

RCET 0331 Laser Systems and Optics Theory: 4 semester hours.

RCET 0332 Laser Systems and Optics Laboratory: 4 semester hours.
Practical application of theory and analysis in analyzing laser/optics systems. Su
RCET 0371 Advanced Math for Electronics: 4 semester hours.
The study of computer programming languages at the machine level, assembler
level, and high level, a standard operating system, translation of numbers between
number systems. F, S

RCET 0373 Advanced Digital Theory: 5 semester hours.
A study of microcomputer operation, programming, interfacing to digital and
analog systems, and troubleshooting. Memory and storage systems. System
microcontroller integration using a software development system. F, S

RCET 0374 Advanced Pulse Theory: 5 semester hours.
A study of analog/digital circuits used in the video studio. Introduction and
analysis of a television studio system, modules, and individual analog/digital
circuits will be covered. Discussion, lectures, classroom and lab demonstrations
are used to help the student gain knowledge and troubleshoot equipment in large
system. COREQ: RCET 0376. F, S

RCET 0375 Advanced Digital Laboratory: 5 semester hours.
Practical application of topics covered in RCET 0371 and RCET 0373 while
building, programming, and troubleshooting microprocessor and microcontroller-
based systems. F, S

RCET 0376 Advanced Pulse Laboratory: 5 semester hours.
Practical equipment and systems application of analog/digital circuits used
in conjunction with Advanced Pulse Theory (RCET 0374). Operation of the
lab is by an exploratory method with guides furnished by the instructor. Test
results of these explorations will be maintained in written log form and will be
presented in verbal form to other student technicians. One major student project
is accomplished during the semester. The student must give an oral and written
presentation on the project. COREQ: RCET 0374. F, S

RCET 0382 Introduction to Rapid Prototyping: 2 semester hours.
Introduction to the software, tools, and techniques used in modern rapid
prototyping processes. Equivalent to UAS 0382. D

RCET 0383 Advanced Laser Systems and Optics Theory: 5 semester hours.
Advanced theory and analysis of lasers and associated devices. Covers advanced
laser topics, wave and geometric optics, electro-optics devices and components.
PREREQ: RCET 0331 and RCET 0332. D

RCET 0384 Advanced Laser Systems and Optics Laboratory: 3 semester hours.
Practical application of advanced theory and analysis in analyzing laser/optics
systems. PREREQ: RCET 0331 and RCET 0332. D

RCET 1372 Calculus for Advanced Electronics: 4 semester hours.
Algebraic, trigonometric, logarithmic and exponential functions, derivatives
and integrals with electronic and other physical applications. Also included
McClaurin's, Taylor's and Fourier's series and introduction to differential
equations. Supports RCET 0374. Satisifies Objective 3 of the General Education
Requirements. F, S