

ELECTRICAL ENGINEERING TECH. (662)

662-102. DC Circuit Analysis. (4 Credits)

Discover the fundamental laws, properties and mathematics of electrical engineering technology and their applications to direct current (DC) circuits. A variety of methods analysis techniques are explored in detail to thoroughly analyze even complex DC circuits. Utilize Ohms Law, Kirchoffs Law, mesh and nodal analysis. Explore various network theorems including Thevenins and Nortons Theorems, Superposition and Maximum Power Transfer. Investigate the transient response of capacitive and inductive circuits and the behavior of magnetic circuits. Develop skills through computer-aided circuit simulation and analysis software. Learn troubleshooting techniques during lab activities.

Prerequisites: (804-198 (may be taken concurrently) with a minimum grade of C or 804-196 (may be taken concurrently) with a minimum grade of C)

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=662&num=102>)

662-104. AC Circuit Analysis. (4 Credits)

Explore alternating current (AC) analysis of electrical networks. Investigate topics such as: average and complex power, RMS values, transformers, frequency response, resonance, passive filters, two-port networks, and polyphase systems. Use computer-aided circuit design, simulation and analysis software to reinforce laboratory experiments and to illustrate AC principles. Continue to develop troubleshooting skills. Prerequisites: 662-102 (may be taken concurrently) with a minimum grade of C and 804-198 (may be taken concurrently) with a minimum grade of C

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=662&num=104>)

662-108. Linear Circuit Analysis. (3 Credits)

Develop knowledge of dependent sources, RC/RL circuits, and RLC circuits. Apply formal transient analysis using differential equations to solve first- and second-order differential equations. Examine other techniques in solving RC/RL and RLC circuits.

Prerequisites: 804-156 (may be taken concurrently) with a minimum grade of C and 662-104 with a minimum grade of C

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=662&num=108>)

662-190. Electronic Circuits I. (4 Credits)

Discover the characteristics of common non-linear circuit elements. Investigate the important parameters of diode, transistors, voltage regulators, operational amplifiers, and thyristors. Explore the analysis and design of: power supplies and amplifier systems incorporating Bipolar Junction Transistors (BJTs) and Field Effect Transistors (FETs). Utilize computer-aided circuit design, simulation and analysis software. Continue to develop troubleshooting skills.

Prerequisites: (662-104 (may be taken concurrently) with a minimum grade of C)

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=662&num=190>)

662-191. Electronic Circuits II. (4 Credits)

Power, multistage, differential, and operational amplifiers will be analyzed. Techniques for developing active filters and oscillator circuits will be presented. Pencil and paper as well as computational techniques for AC load-line analysis, input and output impedance calculations, Bode phase and magnitude plots, feedback compensation, and circuit stability will be investigated in depth.

Prerequisites: 662-190 with a minimum grade of C and 804-198 with a minimum grade of C

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=662&num=191>)