CLEVELAND INSTITUTE OF ELECTRONICS SYLLABUS
DC Circuit Theory Course

View entire **Industrial Electronics with PLC Training Lab** program.

COURSE DESCRIPTION:
This course is designed to explore the principles of DC circuits including Ohm's law, Kirchhoff's laws, series and parallel circuits and equivalent circuits. In addition, the course explains fractions, decimals, signed numbers, ratios, proportions, square roots, inverse proportions, and negative numbers.

LEARNING ACTIVITIES:
This course consists of twenty lessons. Each lesson requires you to read topics, or portions thereof, and to answer questions based on the assigned readings. You should solve all the problems in the exercise sections before continuing to the next topic.

PERFORMANCE REQUIREMENTS:
Master the concepts presented within each reading assignment and solve all problems in all exercise sections.

STUDENT EVALUATION AND GRADING METHOD:
Students are required to complete all performance requirements as stated above. Each of the twenty lessons concludes with an examination comprising of a multiple-choice test. The lesson examinations are open book.

The minimum passing grade is 70%. If you receive a 69%, you must take the exam again. For AAS students, a cumulative average of 78% must be maintained.

READING LIST:

Textbook: Current and Voltage / Controlling Current and Voltage (2330A,B)
Author: Wayne Lemons
Publisher: Cleveland Institute of Electronics
Goal: Upon completion of these lessons the student will be familiar with current and voltage, the units used to express them and how to calculate them.

Textbook: Power Distribution / Portable Extension Cords (2333A,B)
Author: Charles A. Mayer
Publisher: Cleveland Institute of Electronics
Goal: Upon the completion of these lessons the student will understand the power distribution system.

Textbook: Static Electricity / Electric Currents and Semiconductor Devices (2336A,B)
Author: Wayne Lemons
Publisher: Cleveland Institute of Electronics
Goal: Upon completion of these lessons the student will be familiar with resistance, conductors, and insulators to a home and how to choose a proper extension cord

Textbook: Fractions and Decimal Numbers / Reciprocals, Percentage and Powers of Numbers (2101A,B)
Author: Bernard D. Ross
Publisher: Cleveland Institute of Electronics
Goal: Upon completion of these lessons the student will be able to use and understand fractions , decimals, percentages and exponents.

Textbook: The Three Basics of Electric Circuits/ Ohm's Law, Conductors, and Insulators (2339 A, B)
Author: Wayne Lemons
Publisher: Cleveland Institute of Electronics
Goal: Upon completion of these lessons the student will be familiar with resistance, current and voltage, their calculation, conductors and insulators.

Textbook: Connecting and Tracing Battery Circuits / Identifying Components / Tracing Wiring on Printed Circuit Boards (2342 A,B,C)
Author: Darrell L. Geiger
Publisher: Cleveland Institute of Electronics
Goal: Upon completion of these lessons the student will be able to trace circuits including circuit boards and identify components.

Textbook: Roots of Numbers, Ratio and Proportion / Inverse Proportion and Negative Numbers (2102 A, B)
Author: Bernard D. Ross
Publisher: Cleveland Institute of Electronics
Goal: Upon completion of these lessons the student will understand the meaning of roots, ratios, proportions inverse and direct proportions, including the meaning of negative numbers.

Textbook: Parallel Circuits / Equivalent Circuits / Applications of Kirchhoff's Laws (2323 A,B,C)
Author: Darrell L. Geiger
Publisher: Cleveland Institute of Electronics
Goal: Upon completion of these lessons the student will be able to identify series and parallel circuits, determine equivalent circuit perform calculations as related to these circuits, use Kirchhoff's law.

Textbook: Series-Parallel Circuits / Voltage and Power (2324 A, B)
Author: Darrell L. Geiger
Publisher: Cleveland Institute of Electronics
Goal: Upon completion of these lessons the student will understand parallel and series circuits, finding current, voltage and resistance in each, and the expression of power.