

TITLE: LATI ON-LINE ELECTRONICS FOR HIGH SCHOOL STUDENTS

COURSE TITLE: CT00122 –AC Circuits- .5 CREDIT HOUR

TIME: TBD through cooperation with the Corona Learning Center

INSTRUCTOR: Cheryl Rondeau-Bassett

PHONE: 605-434-8150 Corona Learning Center
605-237-1501 Cell EMAIL: crondeau@tnics.com

Mission Statement

Lake Area Technical Institute offers superior, comprehensive technical education, creating a foundation for success in an every-changing world.

Vision Statement

Lake Area Technical Institute will be the leader in technical education working in partnership with business and industry and all levels of education. Lake Area Tech staff will integrate the latest technology and methods of delivering quality education to meet merging global workforce demands. Lake Area Tech will continue to develop marketing strategies to promote technical education and will maintain excellence in all programs.

COURSE DESCRIPTION:

This is a hands-on (the students uses laboratory equipment) intermediate-level electronics course that provides an understanding of alternating current electricity. Students will learn about magnetism, and the basic electrical devices (coils, capacitors, etc.). Additionally, the student will learn how to use electronic test equipment – especially the oscilloscope.

Topics Covered – The following topics will be covered:

1. Introduction to Alternating Current
2. AC Test Equipment
3. Inductance and RL Circuits
4. Introduction to the Capacitor
5. RC Time Constants and Transients
6. Resonance
7. Transformers
8. Relays and Switches

Laboratory Exercises– each student will perform the following labs:

1. Using the Multimeter in an AC Circuit
2. Oscilloscope
3. Function Generator
4. Inductor
5. Series RL Circuit
6. Parallel RL Circuit
7. Capacitor
8. RC Filters
9. RC Time constants

10. RC Circuit Transients
11. LCR Circuits
12. Series Circuit Resonance
13. Parallel Circuit Resonance
14. Transformer Operation
15. Relays and Switches

PROGRAM OF STUDY:

This is the second of four-courses offered by CATE. The courses in this series are DC Circuits, AC Circuits, Analog Circuits and Digital Circuits.

COURSE LENGTH:

All CATE courses are self paced; however, students enrolled in DC Circuits should be able to complete the coursework meeting one hour per day for one standard semester.

COURSE PREREQUISITES: DC Circuits

This course requires skills in Algebra. It is recommended that the student has passed Algebra I with a C or above prior to enrolling in this course.

Basic foundation skills in the areas of reading, writing, speaking, listening, problem solving, and reasoning are also important.

Responsibility, self-discipline and integrity are vital.

COURSE POLICIES:

1. This is an on-line course, taught primarily using Computer Aided Instruction (CAI), which has been developed by the NIDA Corporation. It also provides exposure to interactive video, hands-on circuit construction, field trips, and regional competition.
2. Students are expected to complete each lesson in the NIDA curriculum. It is required that all students take each of the Block Tests and the Final Test. Lessons must be completed with a minimum score of 70%. All students will complete the pre- and post-tests.
3. Students will work independently; however, they may work in pairs on projects and on the CATE competition.
4. Student evaluation is based on average lesson scores, average Block Tests, the Final Test, pre- and post-test differences, and teacher discretion.
5. **Any form of dishonesty is unacceptable. There is no excuse for cheating and any student caught doing so may be expelled from the course.**

