

TITLE: LATI ON-LINE ELECTRONICS FOR HIGH SCHOOL STUDENTS

COURSE TITLE: CT00124 –ANALOG Circuits- .5 CREDIT HOUR

TIME: TBD through cooperation with the Corona Learning Center

INSTRUCTOR: Cheryl Rondeau-Bassett

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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) upper-level electronics course that provides an understanding of complex analog circuitry. Students will learn about active electronic devices, especially the transistor and the diode. Students will explore the use of amplifiers, osciollators and pulse circuits. Additionally the student will learn how to use electronic test equipment – especially the function generator and the oscilloscope.

Topics Covered – The following topics will be covered:

1. Diodes and Diode Circuits
2. Transistor Circuits
3. Power Supplies
4. Transistor Amplifiers
5. Transistor Oscillators
6. Transistor Pulse Circuits
7. Trigger Device Circuits
8. Operational Amplifiers

Laboratory Exercises– each student will perform the following labs:

1. Junction Diode Troubleshooting
2. Limiter and Clamper Troubleshooting
3. Common Emitter Amplifier
4. Common Collector Amplifier
5. Common Base Amplifier
6. Voltage Regulator Troubleshooting
7. Multistage Amplifier

8. FET Amplifier
9. Troubleshooting the Sine Wave Oscillator
10. Troubleshooting the Multivibrator Circuit
11. Troubleshooting the Schmitt Trigger Circuit
12. The SCR Power Control Circuit
13. Operational Amplifier Circuit

PROGRAM OF STUDY:

This is the fourth 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, AC Circuits & Algebra II

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. The student is expected to take notes and to keep a notebook. Part of the student's grade is based on teacher discretion, and discretionary points are based, in part, on the notebook.
6. **Any form of dishonesty is unacceptable. There is no excuse for cheating and any student caught doing so may be expelled from the course.**

