

DIGITAL ELECTRONICS
GRADES 11-12
(1 Semester - Prerequisite: Introduction to Electronics)

COURSE OVERVIEW:

Basic electronic circuit theory is reviewed. Digital electronics is introduced using a circuit building testing approach. Semiconductor theory, power supplies, gates, binary numbers, counters, and linear circuits are covered. Students study the theoretical aspects and then build practical circuits testing and troubleshooting them.
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UNITS OF INSTRUCTION:

- UNIT I - Semiconductor Theory
- UNIT II - The Binary Number System
- UNIT III - Counters
- UNIT IV - Logic and Logic Gates
- UNIT V - Simple Micro-processors

STUDENT OUTCOMES:

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| <ol style="list-style-type: none">1.2.3. | Using a hands-on circuit construction technique on a breadboard, students will build and test circuits such as rectifier circuits and basic power supplies, clock circuits, binary and decimal counters, logic gate circuits, flip-flops, and simple adders.
Acquaint students with the operation of a simple micro-processor.
Have students build and test a project that incorporates some of the circuits studied and built earlier. |
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MAJOR LEARNING EXPERIENCES TO ACHIEVE OUTCOMES:

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| <ol style="list-style-type: none">1.2.3. | Breadboard electronic circuits.
Use test equipment to troubleshoot and analyze circuits bread boarded.
Assemble, test, troubleshoot, and build a case for a student chosen electronic project. |
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ADOPTED TEXT OR PRINCIPAL MATERIALS USED:

Tokeim, Rodger. *Digital Electronics*. McGraw Hill Book Company, 1984

(05/09/00)