



COURSE SYLLABUS

Programs in Technology Education

General H.H. Arnold High School

I. COURSE NUMBER AND TITLE: VEE401, Digital Electronics II

II. CREDIT: 1 Semester

III. PREREQUISITE: Applied Electricity and Electronics or consent of the instructor

IV. COURSE DESCRIPTION: Digital electronics familiarizes 9th through 12th grade students with the highly technical area of integrated circuits and digital logic circuitry. Students progress at their own pace while studying independently. Through experimentation, the study of Boolean Algebra, logic circuits, registers, arithmetic logic units, D/A and A/D converters, encoders, decoders, and storage devices, prepares students to enter the field of microprocessor and computer technology.

V. COURSE OBJECTIVES:

Upon completion of this course, students should be able to

1. Describe the basic concepts of digital integrated circuits.
2. Analyze digital circuits using a triggered dual-trace oscilloscope.
3. Use Boolean Algebra to assist in simplifying digital circuits.
4. Describe the operation of logic gates.
5. Construct register circuits using flip-flops.
6. Demonstrate the use of shift registers, digital counters, decoders, and encoders.
7. Construct error detection circuits, digital-to-analog and analog-to-digital converters, and memory circuits.
8. Construct digital electronic projects using a solderless breadboard.

VI. COURSE OUTLINE:

1. Electricity/Electronics Course Orientation
2. Digital Electronics
Numbers We Use in Digital Electronics
3. Binary Logic Gates
4. Using Binary Logic Gates
5. Codes, Encoding, Decoding
6. Flip-Flops
Counters
7. Shift Registers
8. Arithmetic Circuits
9. Memories
10. Digital Systems
Connecting With Analog Devices

VII. CURRENT TEXTS:

DIGITAL ELECTRONICS
Tokheim

DIGITAL ELECTRONICS,
ADVANCED DIGITAL LOGIC CONCEPTS
Lab-Volt Lab Manuals

VIII. PREPARED: August 25, 2002