Mohawk valley community college  
Utica and Rome New york

COURSE OUTLINE

ET235 - Digital Logic  
4.0 Credit Hours

1. COURSE DESCRIPTION:

ET235 - Digital Logic C-4 P-2 Cr-4

This is an introductory course in digital electronics. This course provides an overview of the basic logic circuits inherent in all digital electronics applications. Topics include the various numbering systems, encoders and decoders used in digital systems, binary logic gates, flip-flops, counters, shift registers with arithmetic circuits. Memories and interfacing of digital and analog devices are also investigated. Experiments supporting related information are designed to provide maximum hands-on experience for students with no prior training in electronics. It starts out exploring numbering systems and codes. Combinational logic devices are studied at a functional level. Proper usage of laboratory equipment is also stressed.

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1. Prerequisite:

ET101 Technical Electricity I

MA106 Technical Mathematics 2

1. Required Texts, Reading, Materials:
2. STUDENT LEARNING OUTCOMES:

The student will be able to:

1. Recognize and identify basic logic symbols
2. Explain basic logic functions
3. Simplify logic circuits to minimize gates
4. Recognize sequential circuits and predict behavior
5. Recognize counter circuits and identify characteristics
6. Convert between different numbering systems
7. Identify different logic families, their characteristics and interfacing methods
8. Interface hardware devices to logic circuits
9. Recognize characteristics of A/D and D/A converters
10. Identify characteristics of different types of semiconductor memory.
11. MAJOR COURSE TOPICS:

Chapter 1 Digital Electronics

Chapter 2 Numbers We Use in Digital Electronics

Chapter 3 Logic Gates

Chapter 4 Combining Logic Gates

Chapter 5 IC Specifications and Simple Interfacing

Chapter 6 Encoding, Decoding, and Seven-Segment Display

Chapter 7 Flip-Flops

Chapter 8 Counters

Chapter 9 Shift Registers

Chapter 10 Arithmetic Circuits

Chapter 11 Memories

Chapter 12 Simple Digital Systems

Chapter 13 Computer Systems

Chapter 14 Connecting with Analog Devices

1. LABORATORY TOPICS:

Students will participate in the laboratory exercises. At the end of each laboratory a lab report will be submitted as part of the grading.

# **COURSE NAME: \_\_\_\_\_** **ET235 Digital Logic**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## **DATE FACULTY NAME CHANGE INPUT MEASUREMENT ASSESSMENT ACTION**

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| **11/21/22** | **M Higgins** | **Add disclaimers** | **College Requirements** |  |  |  |
|  | **M Higgins** | **Update detail to course outline** | **College Requirements** |  |  |  |
| **8/17/22** | **M Higgins** | **Update CRNs, Sec #’s** | **SIRS** |  |  |  |
| **1/6/23** | **M Higgins** | **Update CRNs, Sec #’s** | **SIRS** |  |  |  |
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