

Louisiana Delta Community College

Academic Affairs Master Syllabus

Course Name: DIGITAL LOGIC & ANALOG DIGITAL CONVERSION

Course Number: INST1030

Lecture hours: 1 **Lab Hours:** 2 **Contact Hours:** 75

Textbook, Author, and Publisher: To be provided by College Campus

Instructor Information: To be provided by College Campus

Class Location: To be provided by College Campus

Course Description:

This course is an introduction to numbering systems, logic gates, digital integrated circuits, Boolean logic operations. Also covers Flip-Flops, Registers and Analog Digital Conversion.

Prerequisites: None

Co-requisites: INST1000, INST1010, INST1020

Learning Outcomes:

On completion of this course, the student will be able to:

1. Perform conversions of various numbering systems.

Objectives:

- a. Define terms associated with the various numbering systems.
- b. Convert numbers in decimal, binary, octal, and hexadecimal.

2. Analyze NOT, OR, AND, NAND, NOR, and XOR logic gates.

Objectives:

- a. Define terms and identify types of logic gates.
- b. Describe the operation of logic gates.
- c. Construct basic logic gates.
- d. Troubleshoot and repair basic logic circuits.

3. Describe Boolean operations and logic.

Objectives

- a. Define terms associated with Boolean operations
- b. Boolean Algebra
- c. Simplifying Boolean Circuitry

Learning Outcomes continued:

4. Demonstrate the principles of binary counters and Shift Registers

Objectives:

- a. Define terms associated with binary counters.
- b. Describe the operations of binary counters.
- c. Construct binary counters.
- d. Troubleshoot and repair various binary counters.
- e. Demonstrate the principles of shift registers.
- f. Describe the operational characteristics and uses of shift registers.

5. Demonstrate the operations of clock and timing circuits.

Objectives:

- a. Describe the principles and characteristics of clock and timing circuits.
- b. Explain the uses of clock and timing circuits.
- c. Construct clock and timing circuits.
- d. Troubleshoot and repair clock and timing circuits.

6. Describe the conversions of digital to analog (D-A) and analog to digital (A-D) circuits.

Objectives:

- a. Identify the design and construction of D-A and A-D circuits.
- b. Explain the principles and operation of D-A and A-D circuits.
- c. Analyze D-A and A-D conversions.
- d. Troubleshoot and repair D-A and A-D circuits.

Assessment Measures: To be provided by the College Campus.

Library Resource Center:

The Delta Library and Learning Resource Center is committed to providing quality information and learning resources and services, including technology, in supporting the overall mission of Delta Community College and its commitment to lifelong learning.

Special Accommodations:

Louisiana Delta Community College complies with Section 504 of the Rehabilitation Act, as well as the Americans with Disabilities Act. Students with disabilities who attend the Monroe campus may make a request by contacting the Director of Counseling and Disability Services (See College Directory for contact information.) at the beginning of each semester. Reasonable accommodations will be attempted for students with documented disabilities. If an impairment is identified later in the semester, a non-retroactive accommodation plan will be developed. Students at satellite campuses should contact the Coordinator of Student Affairs at their particular campus.

Title IX:

Louisiana Delta Community College is committed to protecting the rights of students, which includes compliance with Title IX requirements. As such, the institution and members of our community will not tolerate the offenses of dating violence, domestic violence, sexual assault, and stalking. Students with Title IX concerns should contact the College's Title IX Coordinator (See College Directory for contact information.) Students are required to complete Sexual Assault Awareness and Prevention Online Training. Access to this online course will be sent out through the Delta email account.

Student Code of Conduct:

Louisiana Delta Community College encourages an environment of academic integrity and mutual respect. Students should read and follow both academic and behavioral expectations identified in the Code of Student Conduct that can be found online at www.ladelta.edu. Students are expected to act with integrity, respect the rights of others, and conduct themselves in a professional manner.

The Honor Code prohibits academic misconduct such as cheating, engaging in unauthorized collaboration, and plagiarism. Violations of the Code of Student Conduct may result in disciplinary action as provided in the Code. Incidents are reported through the online Student Conduct system.