

CDA 3201C – Introduction to Logic Design

Credits: 4

Text book, title, author, and year: *Digital Fundamentals*, by Tomas L. Floyd, Tenth Edition, Pearson Prentice Hall, 2009

a. **Supplemental materials:** none.

Specific course information

- a. **Catalog description:** Fundamentals of logic design, Boolean algebra, simplification of Boolean expressions, design of combination circuits, design with SSI and MSI logic ICs including PLDs. Flip flops, analysis and synthesis of sequential circuits, design with MSI and LSI logic ICs. Appropriate CAD tools/simulation and training kits will be used in the lab to build logic circuits.
- b. **Prerequisites or Corequisites:** COP2220
- c. **Required, elective, or selected elective:** required

Specific goals for the course

- a. **Specific outcomes of instruction:** By the end of the course students will be able to: (i) To learn the fundamental structures and behavior of logic components, combinational and sequential. (ii) To develop the ability to analyze and synthesize digital circuits and systems. (iii) To develop the basic understanding of computing hardware. (iv) To develop the ability to design basic digital systems for real life applications.

Brief list of topics to be covered:

- Number Systems and the Basics of Combinational Systems
- Switching Algebra and Logic Circuits
- More Algorithmic Simplification Techniques (primarily Karnaugh Map)
- Solving Larger Problems
- Sequential Systems
- Solving Larger Sequential Problems
- Simplification of Sequential Systems (time permitting)