ETRO 143 : Digital Electronics

Credits: 3
Class Hours: 3 lecture
Prerequisites: Qualified for MATH 103.
Corequisite Courses:
ETRO 143L
Description: This course is an introduction to number systems, codes, logic gates, Boolean algebra, and ICs used in digital circuits. Digital design using both logic gates and the VHDL programming language are studied. Analog-to-digital/digital-to-analog and microprocessor interfacing are introduced.
Semester Offered: Fall
Course Student Learning Outcomes (CSLOs):
1. Explain the differences between analog and digital signals and systems.
2. Utilize binary, octal, decimal, and hexadecimal numbering systems and digital codes, convert from one number system to another, and perform mathematical operations using these number systems.
3. Demonstrate and verify circuits with truth tables and timing diagrams.
4. Design and analyze various digital integrated circuits.
5. Analyze digital circuits using circuit design and simulation software.
6. Demonstrate how electronics hardware can be used to interface to an analog world.
7. Demonstrate an understanding of digital memory technologies.