ECE 3772 – Electrical Engineering Laboratory II
Spring 2002

2000-2002 Catalog Data: ECE 3772: Electrical Engineering Laboratory II. Prerequisites: ECE 2213 & ECE 2772. Introduction to nonlinear devices in electronic circuit construction, simulation, measurement and instrumentation. Emphasis on diodes, operational amplifiers, dc biasing of transistors, transistor switching and logic, boolean logic gates, flip flops, shift registers and integrated circuit applications.

Prerequisites: ECE 2213 & ECE 2772.


References: Classroom handouts for each weekly laboratory experiment

Course Objectives: This lab focuses on developing competence in experimental methods with discrete analog semiconductor components, and discrete logic using a variety of integrated circuits. Concentrated instruction is provided in PSpice circuit simulation software, and LabView computer input/output interface methods for both analog and discrete signals.

Coordinator: Dr. Ronald J. LaSpisa, Visiting Associate Professor, School of Electrical and Computer Engineering

Instructor: (Spring 2002) Mr. Clifford Fitzmorris, Adjunct Instructor.

Laboratory Topics: 1. Lab II Instrumentation
2. Diodes and PSpice
3. Transistors: Biasing and DC parameters
4. Transistors: Switching and Logic
5. Operation Amplifiers
6. Analog Project
7. Digital Logic Gate Parameters
8. Combinational Logic
9. Flip-Flops
10. Linear Feedback Shift Register
11. Digital Project

Schedule: One 1 hour common lecture session per week, plus three hours lab work for each section.

Computer Usage: Laptop PCs used extensively for simulation and I/O interfacing.

Design Projects: Students solve both a power supply design and a logical sequential circuit design problem.
Written and Oral Communications: Moderate content written lab reports. Limited oral responses during lectures and review periods.

Teamwork: Student perform laboratory work in groups of two. Homework and design done individually.

Assessment methods used:
1. Graded lab reports
2. Midterm and final exams

Contribution to Professional Component:
- Engineering Science - 2 credit hours
- Engineering Design - 1 credit hour

Program Objectives & Related Strategy and Actions:
2: i, iii
4: i
5: ii

ABET 2000 Criterion 3 Contents: a, b, c, e, g, k

Prepared by: Ronald J. LaSpisa; Date: April 25, 2002