Digital Application

EECT 122

COURSE SYLLABUS

**EECT 122, DIGITAL APPLICATIONS**

COURSE TITLE: Digital Applications

COURSE NUMBER: EECT 122

PREREQUISITES: EECT 112 Digital Fundamentals

SCHOOL: Technology

PROGRAM: Electronics and Computer Technology

CREDIT HOURS: 4

CONTACT HOURS: Lecture: 3 Lab: 2

INSTRUCTOR: Ron Uhey

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COURSE DESCRIPTION: This course continues the study of combinational and sequential digital applications. The input and output characteristics of the various common logic families and the appropriate signal conditioning techniques for on/off power interfacing are discussed. Also stressed are standard logic function blocks, digital and analog signal interfacing techniques, and memory devices.

MAJOR COURSE LEARNING OBJECTIVES: Upon successful completion of this course the student will be expected to:

Construct, test, and troubleshoot digital circuits and subsystems.

Analyze the theoretical operation of given digital circuits and subsystems.

Design digital circuits and subsystems with specified characteristics or for specified applications.

Perform binary and hexadecimal arithmetic operations.

Apply standard logic blocks in various digital circuit applications.

Design sequential logic circuits using programmable logic devices for various digital applications.

Analyze digital circuits using digital simulation software.

Interpret published voltage, current, and timing parameters for digital devices.

Compare the characteristics of the major IC logic families.

Analyze and design digital wave shaping and timing circuits.

Interface analog inputs or outputs to digital circuits.

Interface digital outputs to drivers and actuators.

Analyze the addressing organization for given memory systems.

Design memory systems using specified memory chips.

COURSE CONTENT: Topical areas of study include –

Flip-flops ROM memory

Asynchronous counters Ring counters

Synchronous counters D-to-A converters

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Shift registers A-to-D converters

Arithmetic logic units Digital displays

RAM memory Arithmetic-logic units

Display decoders PLD devices

7-Segment displays Control busses

Data busses Address busses

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Week Date Chapter

1 JAN 16 INTRO

2 JAN 23 5

3 JAN 30 6

4 FEB 6 6

5 FEB 13 EXAM

6 FEB 20 7

7 FEB 27 8

8 MAR 6 MIDTERM

9 MAR 13 SPRING BREAK

10 MAR 20 8

11 MAR 27 9

12 APR 3 10 EXAM

13 APR 10 11

14 APR 17 12

15 APR 24 13

16 MAY 1 REVIEW

17 MAY 8 FINAL