

**ELEC 68B Course Outline as of Fall 2009****CATALOG INFORMATION**

Dept and Nbr: ELEC 68B Title: PULSE/DIGITAL CIRC 2

Full Title: Pulse &amp; Digital Circuits 2

Last Reviewed: 11/5/1997

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	4.00	Lab Scheduled	2.00	6	Lab Scheduled	35.00
		Contact DHR	1.00		Contact DHR	17.50
		Contact Total	6.00		Contact Total	105.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 210.00

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

**Catalog Description:**

Concepts to understanding and using the microprocessor as a programmable system component. Major effort is directed to understanding a chosen microprocessor and its relation to memory and the interface to input- output devices. Introduction to LSI devices. Offers hands-on experience with the latest hardware available. Each student has complete 8-bit parallel central processor unit to develop into a usable system.

**Prerequisites/Corequisites:**

Course Completion of ELEC 68A OR Course Completion of ELEC 61 and Course Completion of ELEC 61L and Course Completion of ELEC 90B OR Course Completion of ELEC 71B and Course Completion of ELEC 71BL

**Recommended Preparation:****Limits on Enrollment:****Schedule of Classes Information:**

Description: Fundamental logic circuits are introduced & their operation explained. Discrete components are discussed & the theory progresses to small, medium & large scale integrated

circuits. These building blocks are used to develop the architecture of a microprocessor. From this assembly language programs are written that will run on a 8-bit microprocessor (8085).  
(Grade Only)

Prerequisites/Corequisites: Course Completion of ELEC 68A OR Course Completion of ELEC 61 and Course Completion of ELEC 61L and Course Completion of ELEC 90B OR Course Completion of ELEC 71B and Course Completion of ELEC 71BL

Recommended:

Limits on Enrollment:

Transfer Credit:

Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>CSU Transfer:</b>		Effective:	Inactive:
<b>UC Transfer:</b>		Effective:	Inactive:

**CID:**

**Certificate/Major Applicable:**

Certificate Applicable Course

## **COURSE CONTENT**

### **Outcomes and Objectives:**

The student will be able to:

1. convert between number systems (binary, octal, hexademical)
2. develop truth tables for and, or XOR's.
3. discriminate between odd and even parity.
4. explain the operation of the RST, D, & J/K flip flop.
5. construct an arithmetic logic unit.
6. wire wrap a digital clock and troubleshoot it.
7. write assembly language program for 8085 to test for correct operation.
8. erase and program an 8 kilobit EROM.
9. discriminate between RAM'S and ROM'S.

### **Topics and Scope:**

1. Number systems - decimal, octal, hexadecimal.
2. Truth tables for logic circuits/AND's, OR's, XOR's.
3. Application of XOR's and XNOR's.
4. Types of Flip/Flops.
5. Reading manufacture's specification sheets.
6. Timing Diagram's.
7. Inter connecting multiple integrated circuits.

8. Troubleshooting digital logic circuits.
9. Architecture of microprocessors.
10. Development of 8085 mnemonics.
11. Writing assembly language program's.

### Assignment:

1. Textbook readings.
2. Textbook homework problems.
3. Handout homework problems.

### Methods of Evaluation/Basis of Grade:

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.

Writing  
0 - 0%

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems, Quizzes

Problem solving  
30 - 70%

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None

Skill Demonstrations  
0 - 0%

**Exams:** All forms of formal testing, other than skill performance exams.

Multiple choice, Completion

Exams  
30 - 70%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

None

Other Category  
0 - 0%

### Representative Textbooks and Materials:

COMPUTER FUNDAMENTALS by Malvino.