

EEL 3701C: Digital Logic & Computer Systems

INSTRUCTOR Dr. Karl Gugel NEB 265 gugel@ufl.edu **Office Hours:** 9:00-9:30 and 2:45 - 4:00 pm, MWF

LECTURES

EEL3701 MWF 3rd period (9:35 – 10:25 am) NEB 202
 EEL3701 MWF 7th period (1:55 – 2:45 pm) WM 100 (Williamson Hall)

LAB (NEB 248) SECTIONS

2G72	05F7	268H	0279	155F	5089	1491	174B	2G94	1088
M3-5	M6-7	M10-11	ME1-2	T4-5	T6-7	T10-11	TE1-2	W4-5	W6-7
29HE	1488	9069	5297	1496	2557	5712	155A	2G97	
W10-11	WE1-2	R2-3	R 6-7	R10-11	RE1-2	F3-4	F7-8	F9-10	

CATALOG DESCRIPTION

Elements of digital design with an emphasis on computer design; Boolean algebra, logic simplification, state machine design.

COURSE OBJECTIVES (ABET Design Content 50%)

The student will learn the functional and technological characteristics of microprocessor structures, memory components, peripheral support devices, and interface logic. Through laboratory experiments and textbook examples the student will learn how to integrate and apply microcomputer subsystems and components to common interfacing problems.

TEXTBOOK

Fundamentals of Logic Design, 5th Edition (or higher) by Charlie Roth, (ISBN#: 0534378048)

REFERENCES

Chapters 1-7 from H. Lam & J. O'Malley, *Fundamentals of Computer Engineering: Logic Design and Microprocessors, 1st edition* available at the University Copy Center.

OFFICE HOURS

My office hours are not flexible. If you can't attend them, see me between classes or visit a TA during their office hours.

REQUIRED SOFTWARE

Quartus - student version free from 'www.altera.com' to be further discussed in class.

REFERENCE MANUALS These will be given on our web page as well as other important technical documentation. Our web address is:

<http://www.add.ece.ufl.edu/3701/>

COURSE GRADE DETERMINATION

Exam #1*	28%
Exam #2*	28%
Laboratory**	26%
Homework	4%
Final Quiz	14%
Total	100%

* When exams are handed back for review in class, all re-grades for exams must be turned in at the end of the lecture period.

** A grade of 65% or better in lab alone is required in order to obtain at least a passing grade for the class. In other words, if you score below 65% in lab, it does not matter what your test or homework scores total, you automatically will fail the course.

WORKING TOGETHER - You are encouraged to work together on homework assignments and share ideas on lab assignments. However you are not allowed to copy or duplicate any lab material (code, drawings, etc.) from another student. This work will be considered cheating and you will automatically be failed from the course.

LABORATORY RULES

Revision: August 10th

No food or drink in the Lab! Students work *individually* on each Lab project. It is the student's responsibility to return all equipment and clean her/his work area before leaving the Lab. Students must attend labs during their assigned time. Students must come prepared to the Lab. No student will be admitted to the Lab without the pre-lab work in hand.

WEEK/DAY	DATE	HW	LAB #	Status	Comments
1	M	Aug 20		None	No class
1	T	21		None	
1	W	22		None	Syllabus & Number Systems & Basic Logic
1	Th	23		None	
1	F	24		None	Basic Logic & Number Systems
2	M	27		1	Mixed Logic/Quartus Software/Number Systems
2	Tu	28		1	
2	W	29		1	Mixed Logic/Quartus Software/Number Systems
2	Th	30		1	
2	F	Aug 31	1	1	Mixed Logic/Quartus Software/Number Systems
3	M	Sept 3		None	No class
3	Tu	4		2	Holiday
3	W	5		2	Boolean Algebra/Mixed Logic/Circuit Design
3	Th	6		2	
3	F	7		2	Boolean Algebra/Mixed Logic/Circuit Design
4	M	10		2	MPOS/MSOP/Boolean Simplification
4	Tu	11		Workshop	
4	W	12		3	MSI Devices/K-Maps
4	Th	13		3	
4	F	14	2	3	MSI Devices/K-Maps
5	M	17		3	MSI Devices
5	Tu	18		3	
5	W	19		Workshop	MSI Devices
5	Th	20		4	
5	F	21	3	4	MSI Devices
6	M	24		4	Flip-Flops & Counters
6	Tu	25		4	
6	W	26		4	Flip-Flops & Counters
6	Th	27		None	
6	F	28	4	None	Review
7	M	Oct 1		None	Exam #1 (estimated date due to room request)
7	Tu	2		None	
7	W	3		None	Registers/RAM/ROM
7	Th	4		None	
7	F	5		None	No Class
8	M	8		Workshop	Homecoming
8	Tu	9		5	Exam #1 back in class
8	W	10		5	
8	Th	11		5	ASM Design
8	F	12	5	5	ASM Design
9	M	15		5	ASM Design
9	Tu	16		Workshop	
9	W	17		6	ASM Design
9	Th	18		6	
9	F	19	6	6	RAM/ROM Expansion

WEEK/DAY	DATE	HW	LAB #	Status	Comments
10	M	22	6		RAM/ROM Expansion
10	Tu	23	6		
10	W	24	Workshop		RAM/ROM Expansion
10	Th	25	7		
10	F	26	7		ALU Design
11	M	29	7		ALU Design
11	Tu	30	7		
11	W	31	7		Fan-Out/Noise Margins
11	Th	Nov 1	Workshop		
11	F	2	None	No Class	Holiday (Homecoming)
12	M	5	8	Workshop	Review
12	Tu	6	Workshop		
12	W	7	None		Exam #2 (estimated date due to room request)
12	Th	8	None		
12	F	9	None		G-CPU Design
13	M	12	None	No Class	Holiday
13	Tu	13	8		
13	W	14	8		Exam #2 back in class
13	Th	15	8		
13	F	16	8		G-CPU Design
14	M	19	8		G-CPU Design
14	Tu	20	Workshop		
14	W	21	None	No Class	Thanksgiving
14	Th	22	None		
14	F	23	None	No Class	Thanksgiving
15	M	26	9		G-CPU & Assembly
15	Tu	27	9		
15	W	28	9		G-CPU & Assembly
15	Th	29	9		
15	F	30	10		Review
16	M	Dec 3	None		Final Quiz (est. date due to room request)
16	Tu	4	None		
16	W	5	None	Optional	Check missing scores, Final Quiz possibly returned
16	Th	6	None		
16	F	7	None	No Class	End of Semester

Special Notes Relating to Lab:

- “Workshop” refers to an open lab intended to help students: (1) correct deficiencies from previous laboratory assignments; and/or (2) get an early start on the next laboratory assignment. Although students assigned to each designated section(s) of the workshop have priority, students from other sections may attend outside their own on a space-available basis.
- Students with similar designs (copies) will both receive a zero on the lab. Depending on the level of infraction, you may be automatically failed in the class. Erase your designs on the lab computer before you leave lab to prevent others from using your work!

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- Students will be allowed a one week make-up pass on one lab for full credit. This pass covers all labs missed for medical, accidental, emotional and any other reason a lab was missed. One pass/One lab per student. This does not include Lab #9 which needs to be completed at your regularly scheduled time due to time constraints at the end of the semester.

Special Notes Relating to the Two Exams & Final Quiz:

- All syllabus dates for exams & the final quiz are subject to change due to the room request procedure. i.e. I have asked for the dates shown, however the registrar's office may assign us a room on a different (but close) date.