

George Mason University  
 Volgenau School of Engineering  
 Department of Electrical and Computer Engineering

**ECE 331: Digital System Design**  
 Lecture Schedule  
 Spring 2014

Date	Lec	Topic	Reading	HW Due	Lab
T 1/21	1	Course overview and Introduction	1.1 – 1.5		Introduction to ECE 332
R 1/23	2	Number Systems; Binary Codes	1.6, 5.1, 5.7.3, 5.8		
T 1/28	3	Representing signed numbers in Binary	5.3		Lab #1: Xilinx ISE
R 1/30	4	Binary arithmetic	5.2 – 5.3	1	
T 2/4	5	Basic logic gates; electrical characteristics	2.1-2.4, 3.1-3.3, 3.8		Lab #2: Logic Gates
R 2/6	6	Logic functions; Boolean algebra	2.4 – 2.8, 3.5	2	
T 2/11	7	Introduction to VHDL	2.9 – 2.10, 4.12, A		Snow
R 2/13	8	Karnaugh Maps I	4.1 – 4.2	3	
T 2/18	9	Karnaugh Maps II	4.3 – 4.4		Lab #3: Comb Logic
R 2/20	10	Arithmetic Circuits I	5.2 – 5.3	4	
T 2/25	11	Arithmetic Circuits II	5.8, 6.5		Lab #4: BCD
R 2/27	12	Timing Analysis and Hazards	3.8.5, 9.6	5	
T 3/4	13	Introduction to VHDL Testbenches	supplemental		Lab #5: Adders
R 3/6		<b>Midterm #1 (Lectures 1 – 11)</b>		None	
T 3/11		<b>Spring Break</b>			No Lab
R 3/13				None	
T 3/18	14	Combinational Logic Building Blocks I	6.1, 6.6		<b>Lab Midterm</b>
R 3/20	15	Combinational Logic Building Blocks II	6.2 – 6.4, 6.6	6	
T 3/25	16	Programmable Logic Devices	3.6, 6.2.1		Lab #6: Multiplexer
R 3/27	17	ALU; Structural VHDL	supplemental, A	7	
T 4/1	18	One-bit Memory Elements I	7.1 – 7.3, 7.12		Lab #7: ALU
R 4/3	19	One-bit Memory Elements II	7.4 – 7.7, 7.12	8	
T 4/8	20	Registers and Counters	7.8 – 7.11, 7.13, 8.7		Lab #8: Latch, FF
R 4/10	21	Sequential Logic Circuits I	8.1, 8.9	9	
T 4/15	22	Sequential Logic Circuits II	8.1, 8.4		Lab #9: Register File
R 4/17		<b>Midterm #2 (Lectures 12 – 20)</b>		None	
T 4/22	23	Sequential Logic Circuits III	8.3, 8.4		Lab #10: FSM
R 4/24	24	Sequential Logic Circuits IV	8.2, 8.6, 7.15	10	
T 4/29	25	Sequential Logic Circuits V (if needed)	8.5		Lab #11: Multiplier
R 5/1	26	Memories	10.1.3, supplemental	11	
<b>R 5/8</b>		<b>Final Exam: 9:45 – 11:55am</b>			<b>Lab Final</b>