

## ECE 2214: Physical Electronics (Spring 2022)

### Course Outline & Tentative Course Schedule

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Week	Class	Date	Topics	Assignment
1		1/17	No class	
	1	1/19	Course introduction	Neamen_Ch1.1-1.3
2	2	1/21	Semiconductor materials and diodes	Neamen_Ch1.1-1.3
	3	1/24	Semiconductor materials and diodes	HW1, Neamen_Ch1.1-1.3
	4	1/26	Semiconductor materials and diodes	Neamen_Ch1.1-1.3
3	5	1/28	Field-effect transistor (FET)	Lab 1, Neamen_Ch3.1-3.4
	6	1/31	Field-effect transistor (FET)	Neamen_Ch3.1-3.4
	7	2/2	Field-effect transistor (FET)	HW2, Neamen_Ch3.1-3.4
4		2/4	Field-effect transistor (FET)	Neamen_Ch3.1-3.4
	8	2/7	Basic FET amplifier	Neamen_Ch4.1-4.6
	9	2/9	Exam 1 review	
5	10	2/11	Exam 1	
	11	2/14	Basic FET amplifier	HW3, Neamen_Ch4.1-4.6
	12	2/16	Basic FET amplifier	Neamen_Ch4.1-4.6
6	13	2/18	Basic FET amplifier	Lab 2, Neamen_Ch4.1-4.6
	14	2/21	MOSFET Digital Circuits	Neamen_Ch16.1-16.3
	15	2/23	MOSFET Digital Circuits	HW4, Neamen_Ch16.1-16.3
7	16	2/25	MOSFET Digital Circuits	Neamen_Ch16.1-16.3
	17	2/28	MOSFET Digital Circuits	
	18	3/2	Vector analysis	Ellingson_Ch4
8	19	3/4	Exam 2 review	
	20	3/7	Spring Break (No Class)	
	21	3/9	Spring Break (No Class)	
9	22	3/11	Spring Break (No Class)	
	23	3/14	Exam 2	
		3/16	Vector analysis	Ellingson_Ch4
10	24	3/18	Electrostatics	Ellingson_Ch5.1-5.9
	25	3/21	Electrostatics	HW5, Ellingson_Ch5.1-5.9
	26	3/23	Electrostatics	Ellingson_Ch5.12-5.14
11	27	3/25	Electrostatics	Lab 3, Ellingson_Ch5.22-5.24
	28	3/28	Magnetostatics	Ellingson_Ch7.1-7.9
	29	3/30	Magnetostatics	HW6, Ellingson_Ch7.1-7.9
12	30	4/1	Magnetostatics	Ellingson_Ch7.12-7.14
	31	4/4	Transmission line	Ellingson_Ch3.1-3.10
	32	4/6	Exam 3 review	
13	33	4/8	Exam 3	
	34	4/11	Transmission line	Ellingson_Ch3.1-3.10
	35	4/13	Transmission line	HW7, Ellingson_Ch3.12-3.15
14	36	4/15	Transmission line	Ellingson_Ch3.20-3.22
	37	4/18	Time-varying fields	Lab 4, Ellingson_Ch8.1-8.9
	38	4/20	Time-varying fields	Ellingson_Ch8.1-8.9
15	39	4/22	Time-varying fields	HW8, Ellingson_Ch8.1-8.9
		4/25	EM waves	Ellingson_Ch9.1-9.5
	40	4/27	EM waves	Ellingson_Ch9.1-9.5
16	41	4/29	Exam 4 review	
	42	5/2	Exam 4	
	43	5/4	Advanced topics and Applications	
	42	5/6	Classes End (No Class)	

- D. A. Neamen, Microelectronics Circuit Analysis and Design, 4th edition
- Steven W. Ellingson, Electromagnetics, volume 1