

## ECE 342 SUMMER 2024

### **Instructor**

José Schutt-Ainé – 5042 ECEB (jesa@illinois.edu)

### **Class Time**

9:00 am-9:50 am, MTWRF

### **Teaching Assistant**

Zoreh Salehi (zsalehi2@illinois.edu)

### **Textbook**

Sedra and Smith, *Microelectronic Circuits*, Oxford, 8<sup>th</sup> Edition.  
[ebook](#) with code: **STUDENT24**

### **Web Pages**

The course web page is at <http://courses.engr.illinois.edu/ece342>.

### **Grading Policy**

Homework and Quizzes	20% of total
Midterm Exams	40% of total
Final Exam	40% of total

### **Homework Policy**

Homework will be assigned twice a week and will be due on Tuesday and Friday. Homework must be uploaded by 5 pm at the web site assigned for the course. Late homework will not be accepted. Homework solutions will be posted on the class web page on the day after the due date.

### **Office Hours**

Jose Schutt-Aine - Wednesday 10-11 am  
Zoreh Salehi - Tuesday and Friday, 10:00 am – 11:00 am

### **Midterm Exams**

Midterm Exam 1: Friday, July 5, 9:00 – 9:50 am  
Midterm Exam 2: Friday, July 26, 9:00 – 9:50 am

### **Final Exam**

Saturday, August 3, 1:00 – 3:00 PM

**Syllabus for ECE 342 Summer 2024 (Prof. Jose Schutt-Aine)**

Lec	Day	Date	Topic	S&S -8 <sup>th</sup> Ed
1	M	6/10/24	Review of KCL, KVL, Thevenin and Norton theorems	1.1-1.5
2	T	6/11/24	Large and small signal concepts	1.6
3	W	6/12/24	PN Junction and Diode	4.1-4.2
4	Th	6/13/24	Diode models	4.3-4.6
5	F	6/14/24	Diode applications	4.5
6	M	6/17/24	MOS technology and terminal behavior	5.1-5.2
7	T	6/18/24	DC analysis of circuits with MOSFETs	5.3
	<b>W</b>	<b>6/19/24</b>	<b>JUNETEENTH - NO CLASS</b>	
8	Th	6/20/24	Small signal model for MOSFETS	7.1-7.2
9	F	6/21/24	Common source (CS) amplifier	7.3
10	M	6/24/24	CS amplifier	7.3
11	T	6/25/24	CS amplifier	7.3
12	W	6/26/24	Common gate (CG) and common drain (CD) amplifiers	7.3
13	Th	6/27/24	Bipolar junction transistors (BJT) – Regions of operation	6.1-6.2
14	F	6/28/24	DC analysis of BJT amplifiers	6.3
15	M	7/1/24	Small-signal model for BJTs	7.2
16	T	7/2/24	Common-Emitter (CE) amplifier	7.3
17	W	7/3/24	CE amplifier with degeneration	7.3
	<b>Th</b>	<b>7/4/24</b>	<b>INDEPENDENCE DAY OBSERVANCE - NO CLASS</b>	
	<b>M</b>	<b>7/5/24</b>	<b>Exam 1</b>	
18	M	7/8/24	Common base (CB) and common collector (CC) amps	7.3
19	T	7/9/24	Frequency response - Transfer functions	10.1
20	W	7/10/24	Complex number Bode plots	10.1
21	Th	7/11/24	Transistor intrinsic capacitors	10.2
22	F	7/12/24	Miller's theorem – Open circuit time constant	10.3
23	M	7/15/24	Frequency response of CE and CS amplifiers	10.3
24	T	7/16/24	Frequency response of CB/CG and cascaded CE/CS amps	10.3
25	W	7/17/24	Frequency response of CB/CG and cascaded CE/CS amps	10.3
26	Th	7/18/24	Introduction to feedback	11.1-11.2
27	F	7/19/24	Feedback topologies	11.3-11.5
28	M	7/22/24	Feedback – Stability analysis and examples	11.7
29	T	7/23/24	Operational Amplifiers	2.1-2.4
30	W	7/24/24	Operational Amplifiers	2.7
31	Th	7/25/24	CMOS	16.1
	<b>F</b>	<b>7/26/24</b>	<b>Exam 2</b>	
32	M	7/29/24	CMOS logic	16.2-16.3
33	T	7/30/24	RC delay model for CMOS inverter	17.1
34	W	7/31/24	Transistor sizing	17.2
35	Th	8/1/24	Review	
	<b>S</b>	<b>8/3/24</b>	<b>Final Exam</b>	