

ECE 320 / 329 Syllabus

Lsn	Date	Topic	Assignment
Single Phase AC Power			
1	11-Jan-12	Single Phase AC; Power Calculations	Circuits Text
2	13-Jan-12	Recitation: Single Phase AC; Power Calculations	Lesson 1
	16-Jan-12	Holiday	
3	18-Jan-12	Power in Single Phase AC Circuits	Circuits Text
4	20-Jan-12	Reactive and Complex Power	Circuits Text
5	23-Jan-12	Reactive and Complex Power Examples	Circuits Text
6	25-Jan-12	Recitation: Power in Single Phase AC Circuits	Lessons 1-5
Transformers			
7	27-Jan-12	AC Power; Ideal Transformers	C: Chapter 2
8	30-Jan-12	Non-ideal transformers	C: Chapter 2
9	1-Feb-12	Non-ideal transformers	C: Chapter 2
10	3-Feb-12	Recitation: Transformers	Lessons 7-9
11	6-Feb-12	Per Unit	C: Section 2.6
12	8-Feb-12	Per Unit	C: Section 2.6
13	10-Feb-12	Recitation: Per Unit	Lessons 11-12
Circuit Analogs and Lumped Parameter Magnetics			
14	13-Feb-12	Electromechanical Analogs	Website
15	15-Feb-12	Electromechanical Analogs	Website
16	17-Feb-12	Exam #1: Power Fundamentals and Transformers	Lessons 1-13
	20-Feb-12	Holiday	
17	22-Feb-12	Electromechanical Analogs	Website
18	24-Feb-12	Electromechanical Analogs	Website
19	27-Feb-12	Electromechanical Analogs; Magnetic Circuits	C: Chapter 1
20	29-Feb-12	Magnetic Circuits	C: Chapter 1
21	2-Mar-12	Recitation: Electromechanical Analogs	Lessons 14-18
22	5-Mar-12	Magnetic Circuits	C: Chapter 1
DC Machines			
23	7-Mar-12	Introduction to DC Motors: Linear DC Motors	C: Chapter 7
24	9-Mar-12	DC Motors	C: Chapter 7
Spring Break			
25	19-Mar-12	Recitation: Linear DC Motors	Lessons 21-23
26	21-Mar-12	DC Motors	C: Chapter 8
27	23-Mar-12	DC Motors	C: Chapter 8
28	26-Mar-12	DC Motors	C: Chapter 8
29	28-Mar-12	DC Motors Example	C: Chapter 8
30	30-Mar-12	Recitation: DC Motors	Lessons 24-28
Power Electronics			
31	2-Apr-12	Fundamentals of Power Electronics	H: Chapter 6
32	4-Apr-12	Exam #2: E/M Analogs, Mag Ckts, DC Motors	Lessons 14, 15, 17-29

ECE 320 / 329 Syllabus

Lsn	Topic	Assignment
33	6-Apr-12 Fundamentals of Power Electronics	
34	9-Apr-12 Ideal Converters: Buck	H: Chapter 6
35	11-Apr-12 Ideal Converters: DC to DC	H: Chapter 6
36	13-Apr-12 Ideal Converters: DC to DC	Website: Minty Boost
37	16-Apr-12 Recitation: Ideal DC to DC Converters	Lessons 31-34
38	18-Apr-12 Isolated switch mode power supplies	H: Chapter 7
39	20-Apr-12 Isolated switch mode power supplies	H: Chapter 7
Wiring and Power Quality		
40	23-Apr-12 Industrial & Commercial Distribution Systems	Lab Demonstrators
41	25-Apr-12 Industrial & Commercial Distribution Systems	Lab Demonstrators
42	27-Apr-12 Exam #3: Power Electronics	Lessons 30-37
43	30-Apr-12 Industrial & Commercial Distribution Systems	Lab Demonstrators
44	2-May-12 Power Quality	Demonstration, C: Section 2.12
45	4-May-12 Power Quality	Demonstration, C: Section 2.12
Final Examination		
46	7-May-12 Final Exam: Due 2:30pm Pacific Time	Lessons 1-45

Textbooks

- Circuits Text: Find and use your own text from your circuits course. If you lost yours, any calculus-based circuits textbook is fine. The major on-line book retailers have a good selection. With a little web surfing, you can find some good
- C: Chapman, Electric Machinery Fundamentals, Fifth Ed, ISBN 978-0073529547
We use the Fifth Edition for this course. The Third and Fourth Editions are pretty similar but the homework problems have different numbers. I have a syllabus written for the Fourth Edition available on request. This is the most popular text available for learning electric machines.
- H Daniel W. Hart, Introduction to Power Electronics, ISBN 978-0073380674 (2010 edition)
This is the best introductory power electronics textbook that I have found. No other explains the basics like Dr. Hart.

**Outreach Students are not required to submit the homework or to do recitations:
ECE 320 requires completion of all four exams and is graded A-B-C-D-F.
ECE 329 requires completion of the Final Exam only and is graded Pass-Fail.**

