
HOMEWORK: (15%) Problems have been selected from the end of chapter that cover the essential concepts to an adequate level of complexity. The problem sets and the numerical answers have been included with the problem set along with any hints or comments that were judged useful. In order to encourage you to keep up with the material in real-time, the problem sets will be collected on the given dates and the full solutions will be available on Blackboard that same day.

PLEASE NOTE THAT DUE TO THE SOLUTIONS BEING RELEASED ON THE HOMEWORK DUE DATE, NO LATE HOMEWORK WILL BE ACCEPTED AFTER THE DUE DATE FOR OBVIOUS REASONS....IF YOU CANNOT MAKE IT TO LECTURE, TURN THE WORK INTO THE ECE OFFICE PRIOR TO THE DUE DATE AND IT WILL BE PLACED IN MY MAILBOX.

The problem sets will NOT be graded, due to the answers being given, but credit will be given for an ADAQUATE effort being shown in the work. If you choose, and some of you will, to simply copy the work from someone else and turn it in, be warned that this is a recipe for disaster !!! There is no substitute for working the problem sets and most of those who tried got to take the class again as a booby prize !!

To entice you to do the problem sets, each exam will include 4-5 questions that will cover the same material covered in the assigned problem sets, exercises, and examples from the assigned sections in the text with little to no modification. If you can produce the correct answer given with the problem set and exercises, you will have NO problem with the exams. Think of the problem/exercise sets as a take-home exam with only a “spot check” done to make sure you understand the material. This course covers a lot of material and I believe this approach will help you focus on the fundamental concepts without being distracted by some of the more complex material, albeit useful once the basics are understood. If you cannot get the answers given in the problem set, I suggest you use my office hours to get help before that particular problem, or problems, show up on the exam...

SPICE ASSIGNMENTS: (10 % each) Two computer simulation problem will be assigned and graded during the semester. An automatic "F" will be assigned to any student who fails to submit at least one of the SPICE assignments.

The primary SPICE software used for this course is MultiSim V14 or higher. The student version can be downloaded from http://www.ni.com/multisim/try with the activation code for all student copies being B02P28880. Additionally, the software is available on the website cited in the text. There is an abundance of tutorials on the web if you need further help in getting up and running with the MultiSim.
Please note that the Orcad software is also allowed if you are familiar with it. I strongly recommend that you use the MultiSim as I know the software well and can offer some assistance if needed. I do not like, or use, the Orcad software and cannot offer any assistance, but it is your choice as the assignments are acceptable with either package.

**MIDTERMS: (20% each)** Two non-comprehensive exams will be given. The midterms will be closed book, closed notes, with one 8.5” x 11” sheet of notes. As mentioned earlier, the exam questions will be similar to the assigned problem sets and applicable exercises. The exam solutions will be posted on the glass in E302F.

**FINAL EXAM: (25%)** The final exam will be given at the time and place stated in the current class schedule. Like the midterms, the final will be closed book, closed notes with one 8.5” x 11” sheet of notes. As with the midterms, the exam questions will again be similar to the assigned problem sets and applicable exercises. The final will only include the material covered since the last midterm, it will NOT be comprehensive, consider it just another midterm.

**GRADING:** The class average or 60%, whichever is highest, is considered the beginning of the C grade. Grading is based on the formula given above. Those who exceed the class average or 60%, whichever is highest, will be in the C to A range, those below, C- to F. Typically, approximately 65% of the students pass this class the 1st time. If you have taken this class multiple times and still have not passed, I strongly urge you to reconsider your major.

**CLASS POLICIES AND PROCEDURES:**

1) Although class attendance will not be considered in any grading capacity, the exams will stress material covered in the lecture. Most, but not all the material given in the lecture is taken out of Sedra & Smith. If 6 footers are breaking hard out of the south on a lecture day, be sure to get a copy of the lecture material given that day.

The lecture is designed to supplement the assigned reading in the text, not be a substitute for it. Due to questions and examples done during the lecture, it is unlikely that all the assigned reading material will be explicitly covered during the lecture periods. This implies that you are responsible for studying and comprehending this material yourself. Please use the office hours if you need assistance.

Do not get behind in this class !!!!!!! We will be covering a great deal of material and if you fall behind, I doubt that your class load and/or work schedule will allow you to catch up and salvage a decent grade. The last page of this handout included a detailed class schedule that we will stick to like glue.
2) It will be assumed that the material to be covered in lecture will have been read prior to the lecture. Again, refer to the schedule for the reading assignments. It has been shown that the comprehension of the material is greatly enhanced if reviewed before and not after the formal lecture.

3) Cheating on exams, SPICE assignments or on the final will not be tolerated and will be punished by a zero grade on that item and possibly also an automatic "F" for the entire course. Without exception all such incidents will be reported to the Campus Judicial Coordinator for disciplinary action. Cheating includes copying another students' work, allowing ones' work to be copied, copying anothers' SPICE program, looking on another persons' exam sheet, using unauthorized notes, etc. Don't jeopardize your future by CHEATING !

4) Note taking is an art. I can tell you from personal experience that the best note taking strategy is to RE-WRITE the “rough” note taken during the actual lecture within 72 hours. Transfer the notes to a dedicated notebook and you will notice that the note volume will increase by almost double !! This is due to the fact that much of the lecture was verbal and is not in your rough notes but still in your short term memory. The process of rewriting your notes neatly into the dedicated notebook is the absolute best study strategy as it transfers the verbal information into print before it is lost from your short term memory AND will force you to stay up with the material....It is better to study the material at a regular pace then to try to study all the material in a “cram” session...we all know that this usually does not work....Try this and I can assure you it will make a MAJOR difference in your GPA.

5) Consultations outside of class are limited to the scheduled office hours except by prior arrangement. Office hours will be announced on the 1st day of class.
The books used for this course are MICROELECTRONIC CIRCUITS by Sedra & Smith, 7th Edition.

The following schedule will be used this semester:

Week 1

1) 19 Jan introduction and analog/digital electronics overview

Week 2

2-3) 24-26 Jan Sec 3.1-3.4 pps. 135-154

Week 3

4-5) 31 Jan-2 Feb Sec. 3.5 pps. 155-163 Extra material – Photodiodes and applications Extra material – LEDs and applications

31 Jan P.S. #1-Ch3 due

2 Feb P.S. #2-Ch3 due

skip rest of chapter 3

Week 4

6-7) 7-9 Feb Sec. 4.1-4.4.4 pps. 175-207

7 Feb P.S. #3-Ch3 due

Skip rest of Chapter 4

Week 5

8-9) 14-16 Feb Sec 4.5.1-4.5.4 pps. 207-219

NOTE: We will be doing Chapter 6 (BJT), then Chapter 5 (MOSFET)

Sec 6.1.1-6.1.2 pps. 305-315

14 Feb P.S. #4-Ch4 due
16 Feb  P.S. #5-Ch4 due

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Week 6

10) 21-23 Feb  Sec 6.1.3-6.3  pps. 315-353

21 Feb  P.S. #6-Ch4 due

23 Feb  Exam #1, Chapter 3 and 4

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Week 7

11-12) 28 Feb-2 Mar  Sec. 5.1.1-5.2.5  pps. 248-276

28 Feb  SPICE #1 due

2 Mar  P.S. #7-Ch6 due

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Week 8

13-14) 7-9 Mar  Sec. 5.3  pps. 277-287

9 Mar  P.S.#8-Ch5 due

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Week 9

15-16) 14-16 Mar  Sec. 7.1.1-7.1.7  pps. 367-382

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Week 10

17) 21-23 Mar  Sec. 7.2.1  pps. 383-395

23 Mar  Exam #2, CH 5 and 6 – BJT/CMOS Biasing

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Week 11

27 Mar – 31 Mar  Spring Break

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Week 12

18-19) 4-6 April  Sec. 7.2.1-7.2.2  pps. 396-422

CMOS and BJT Terminal Impedance Models

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Week 13
20-21) 11-13 April  
Sec. 7.3.1-7.3.4  
Sec. 7.4.1-7.5.3  
pps. 423-439  
pps. 454-473

13 April  
P.S. #9-Ch7 due

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Week 14

22-23) 18-20 April  
Sec. 7.3.5  
Sec. 7.5.4  
pps. 439-442  
pps. 473-474

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Week 15

24-25) 25-27 April  
Sec. 7.3.6  
Sec. 7.5.5-7.5.6  
pps. 442-451  
pps. 475-478

27 April  
P.S. #10-Ch7 due

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Week 16

26-27) 2-4 May  
Two stage design example

4 May  
P.S. #11-Ch7 due

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P.S. #12 and SPICE #2 due on day of final exam, solutions will be posted on 4 May.