**ECE 333 LINEAR ELECTRONICS I - Fall 2008**

Section:  ECE-333 001 71848 TR 1:30 PM - 2:45 PM  Room #LH 3

Instructor:  Alok Berry, Rm. 251 ST 2    Ph: (703) 993-1606    e-mail: aberry@gmu.edu
Office Hours: MW 1:00 p.m. – 2:00 p.m.  By appointment only
TR 12:30 p.m. - 1:00 p.m.
TR 3:00 p.m. - 4:00 p.m.
TR 7:15 p.m. - 8:00 p.m.  By appointment only
Others by appointment

Text:  Microelectronics Circuits, Fifth Edition by Sedra and Smith
Publisher: Oxford University Press. ISBN# 0-19-514251-9

Prereq:  Grade of C or better in ECE 280,

Topics:  Principles of operation and applications of electron devices and linear circuits. Topics include semiconductor properties, diodes, bipolar and field-effect transistors, integrated circuits, amplifiers, feedback concepts, operational amplifiers and analog design.

Grading:  Graded Work: Home Works, Reading Assessment, Class Participation and Attendance, Projects, and three Class Exams.

Home Work, Class Participation, attendance and reading assessment 7.5 %
Mini Exam in 2nd in week of classes 5%
1st Project 5 %
2nd Capstone Project 7.5 %
3 Exams: 75 % (Each exam 25 %)

**This semester instead of comp final exam there is a capstone project which is due by the Comp Exam Date.**

**IMPORTANT INSTRUCTIONS**
a. Prior to the class, it is expected that one reads the material which is going to be covered in the class. In the beginning of every class I will ask questions to different students to check about reading assessment.

b. After particular section/sections are completed the students must finish the HW problems pertaining to that section. In the next class I will ask the students to submit only one problem out of all the HW problems from the section/sections covered in the last class. The problem to be submitted will be announced in the beginning of the class and you must submit the problem right in the beginning of the class. No credit will be given if you do not submit problem at that time. You have to submit HW only in the class. Do not submit HW in my office.

c. No overdue for home works and no makeup for exams. In extreme case if a makeup exam is given then only 50% of the earned grades in the makeup exam will be counted in making the final grade.

d. GMU HONOR CODE will be strictly enforced. Violations of the honor code may result in no credit for this course.

e. You are not allowed to bring any loose sheets or formula sheet in the exam. You have to show the work at the space provided, if you need more space you can use the backside of the page. I will provide you the formulae sheet and the blank sheets for scrap work.

f. It is required that you write all the class exams, you get zero points for the missed exam/exams.

g. For maximum learning experience it is very important that students attend all the lectures and do all the suggested home work problems and examples done in the book. Some exam questions will be drawn exclusively from lecture notes and problems you are supposed to have seen. Solution to home work problems will be provided.

h. Please do not come late to the class as it disturbs the whole class. If because of some emergency you have to leave the class early you must inform me in the beginning of the class. If you show up late in the class or you leave the class early, you may lose all the credit for class participation and attendance.

**PROPOSED SCHEDULE**

<table>
<thead>
<tr>
<th>Week number and Dates</th>
<th>Topics</th>
<th>Suggested HW Problems</th>
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<tr>
<td>1. 8/25, 8/27</td>
<td>Introduction, 3.1, 3.2, 3.3</td>
<td>4, 10, 15; 22, 26; 34, 40, 49</td>
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<td>2. 9/2, 9/4</td>
<td>3.3, 3.4</td>
<td>54, 55, 58, 63; 68, 71,</td>
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<td>3. 9/9, 9/11</td>
<td>3.5, 3.6</td>
<td>82, 83, 84, 85; 93, 94, 99, 105(a-e)</td>
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<tr>
<td>Date</td>
<td>Assignments</td>
<td>Notes</td>
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<td>--------------------------------------------</td>
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<tr>
<td>9/16, 9/18</td>
<td>3.7, 3.8*, 3.9*</td>
<td>106, 107, 108, 111, 114, 118</td>
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<tr>
<td>9/23, 9/25</td>
<td>FIRST EXAM</td>
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<tr>
<td>9/30, 10/2</td>
<td>4.3, 4.4</td>
<td>36, 42, 47</td>
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<tr>
<td>10/7, 10/9</td>
<td>4.4, 4.5</td>
<td>51; 61, 66</td>
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<td>10/16, 10/21</td>
<td>4.6, 4.7</td>
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<td>10/23, 10/28</td>
<td>4.7, 4.8</td>
<td>79, 81, 85, 87; (90, 91)</td>
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<tr>
<td>10/30, 11/4</td>
<td>SECOND EXAM</td>
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<tr>
<td>11/6, 11/11</td>
<td>5.3, 5.4, 5.5</td>
<td>73, 74, 76, 78, 79; 93, 97, 98,</td>
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<tr>
<td>11/13, 11/18</td>
<td>5.6, 5.7</td>
<td>116, 124; 128, 139, 144</td>
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<tr>
<td>11/20, 11/25</td>
<td>5.7, 5.8</td>
<td>some more problems</td>
</tr>
<tr>
<td>12/2, 12/4</td>
<td>5.8</td>
<td></td>
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THIRD EXAM

Note that the exam schedules for the exams are tentative. Actual dates will be announced in the class. **No make-up for exams.** In an extreme case if a makeup exam is given only **50%** of the credit (what one earns in the makeup exam) may be included in making the final grade. The makeup exam may be an oral exam.

The sections with A*@@ students should cover themselves.

**TEST TIPS**

* Print your Name VERY CAREFULLY on First Sheet/Formula sheet (if provided)
* Read the Problem
* Answer what (but only what) is Asked
* Label diagrams with parameters in equations - Points are lost here!
* Watch for, and then include UNITS in answers - Points are lost here!
* Identify Answers (Box, Circle, Underline, etc) and put them at the designated space (If provided).
* Communicate
* You have seen all required concepts before

DON'T PANIC!!

In general:

Manage your time. (Also known as "racking up the points")
Skim all problems - find familiar areas.
Read total problem through: if part "a" is "impossible", parts "b", "c", etc may be "doable".
Allot more time to high point value problems.
Leave time to go back and touch up earlier problems.
Do easiest problems first.
Quit when you reach the end of a problem's budgeted time.
You will invariably get more points by starting a new problem than by trying to finish an old one.
Guess. (If the odds are with you)
Make clear how you are solving a problem. (Don't make me guess)
Tell me what you would do (if you had more time or if the problem had not gotten out of control by some errors).
Note any assumptions you have made in doing the problem.
Watch point values: generally they tell how much work is involved.

HOMEWORK DO`S AND DON’TS

A. Mechanics: Points will be deducted for not following these guidelines.
   You are expected to do the HW problems pertaining to a section after a section has been covered in the class.
   1. Buy, beg or steal a stapler to fasten homework pages together.
   2. On all the paper/papers you submit you must print your name, last three digits of your G#, the date and the section# pertaining to that HW.
   3. Use only standard (8 2 x 11) size paper.
   4. Do not use legal size paper.
   5. Computer paper is OK if cut to standard size.
   6. Do not use spiral bound notebook paper.
   7. Do not fold assignments in half.
8. Put all the problems in order.

9. On the first page/cover sheet must write the assigned homework problems and you must mention the problems which you have not attempted.

10. Home works will be accepted in class only. If the homework is not submitted in the class, there are good chances for it to be lost.

11. Must **draw all the required circuit diagrams**. If required circuit diagrams are not drawn for a problem you may get no credit for the entire HW.

12. In HWs and exams etc. you will lose points if you do not put appropriate units and Prefixes with your answers.

13. **If you do not follow these guidelines you may get no credit for the HW**

14. **IN ALL THE WORK TO BE GRADED SHOW ALL STEPS AND ALL THE WORK NEATLY.** You will get zero credit if all the work is not shown.

B. Other considerations

1. Show work. Techniques, approaches and methods for solving are more important than answers on homework (but answers DO count).

2. Homework and exams must be individual effort. Students are encouraged to form study groups to learn and discuss the material.

3. Include all diagrams, labels etc. necessary for the problem to stand "alone."

4. Identify (Box, circle, underline, etc) answers.

**IMPORTANT INFORMATION:**

Before coming to the class all persons (including professor) will turn off all the communication devices (including cellular phones, pagers etc). It is the university policy.

It is very important that you do not miss classes. From second class, almost in every class I will ask questions about the reading assignment and if I find that some student is not doing the
reading assignment, grade of that student may go down by one step, e.g. $>C+ = \text{will go down to } >C-$, $>B = \text{will go down to } >B-$.
If you miss many classes you may not get any credit in class participation.

**No make-up for missed exams. In an extreme case if a makeup exam is given only 50% of the credit (what one earns in the makeup exam) may be counted in making the final grade. The makeup exam may be an oral exam.**

The exam problems will consist of

a. Multiple choice problems in which you will have to mark the correct answer. For these problems no partial credit will be given and each of these may be worth 1 point.

b. Multiple choice problems in which you will have to show the work and partial credit will be given and each of these problems will be worth more than 1 point

c. Some exam problems in which you will have to show all the work.

If you score very low (less than 50%) in the exam/exams you may get a grade $AF@$ in the course.

**The last date to drop is September 26th.**

**The Selective Withdrawl period is from September 27th to October 24th**