SUMMER 2008

MW 4:30 A.M. - 8:10 PM, Room: ST1 120, email: aberry@gmu.edu Phone: (703) 993-1606

Students are expected to check their email regularly. Short notice changes: homework due dates, exam info, class delay/cancellation etc. may be announced via email. For emails only the university assigned email address will be used.

1. **Course Description:** Circuit analysis using superposition, equivalent circuits, transient and steady state analysis of RL, RC and RLC circuits. Applications of Laplace transform in circuit analysis, sinusoidal excitations and phasors, resonance, filters, AC steady-state analysis, coupled coils, and three phase circuits. PSPICE as a circuit analysis tool will be used. A lab demonstrating and investigating circuit analysis concepts is included. Students are expected to be familiar with basic circuit analysis terms and concepts (current, voltage, resistance and Ohm’s Law) prior to entry into ECE 280 and are expected to have mastered the theory and manipulation of Laplace Transforms (via ECE 220) prior to the point in the class where they are applied (see Proposed Schedule).


3. **Office Hours:** Room 251, ST 2. MTWR 3:30 p.m. - 4:15 p.m. By appointment
   TR 7:15 p.m. – 7:45 p.m. By appointment

   Be prepared and be concise

4. **Honor Code:** All students are expected to abide by the George Mason University Honor Code. Sharing of ideas and comparison of answers on homework is acceptable, but copied work will not be accepted. In-class exams will be closed book and closed notes unless specifically stated by the instructor. All work must be your own. Any reasonable suspicion of an honor violation will be reported to the Honor Committee.

5. **Grading:**
   - Three Class Exams (20% each) 60%
   - Comp. Final Exam 20%
   - Homework, Class participation and class attendance 5 %
   - Labs 15%

   No make up for missed exams. In extreme circumstances if a make up exam is to be given, arrangements may be made during the comprehensive final exam day. Make up exam may be an oral exam.
If you receive very low grades in the comp final exam, you may receive a grade “F” in the course.
If you receive less than 50% in any exam you may receive a grade “F” in the course.

6. Homework Policies: Homework will be assigned in class and/or via email during the period a chapter is being covered. The homework will be submitted in the class at the due date. Late homework will not be accepted unless prior arrangements have been made with the instructor. Homework solutions will be provided by email.

7. Grade Changes: A student, requesting that the grade of a homework or exam problem be reconsidered, must provide the instructor with the following information in writing on the same day the work is returned to the class:

   a. The number of the problem(s) to be reconsidered;  
   b. A description of your mistakes made in the problem(s); and  
   c. The reason that you feel that you should receive additional points for the problem(s). i.e. material the instructor did not see that was on the exam or homework paper.

Note: The entire exam or homework may be reconsidered by the instructor at this time.
# PROPOSED SCHEDULE

<table>
<thead>
<tr>
<th>CLASSES</th>
<th>SUBJECT</th>
<th>LECTURE</th>
<th>INDEPENDENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 2.</td>
<td>KVL, KCL, Ohm’s Law, Series/Parallel Resistors. Nodal Analysis</td>
<td>2.2, 2.4-2.6</td>
<td>Chap 1, B/In2*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.2</td>
<td>1.6, 2.7, 2.8</td>
</tr>
<tr>
<td>3 – 4.</td>
<td>Nodal/Mesh Analysis</td>
<td>3.2 - 3.8</td>
<td>B/In3*, 3.1</td>
</tr>
<tr>
<td></td>
<td>Superposition, Thevenin’s and Norton’s Theorem. Operational Amplifiers.</td>
<td>4.2 - 4.6, 4.8</td>
<td>B/In4*, 4.7, 4.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.2 - 5.8</td>
<td>B/In5*</td>
</tr>
<tr>
<td>5 – 6.</td>
<td><strong>I EXAM</strong></td>
<td>6.2 - 6.6</td>
<td>B/In6*</td>
</tr>
<tr>
<td></td>
<td>Capacitors and Inductors. First Order Circuits</td>
<td>7.2-7.6,</td>
<td>B/In7*, 7.8</td>
</tr>
<tr>
<td>7 – 8.</td>
<td>Second Order (2O) Circuits. Laplace Transform, s-domain</td>
<td>8.2 - 8.7</td>
<td>B/In8*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15.4, 15.6</td>
<td>B/In15*, 15.1 - 15.6</td>
</tr>
<tr>
<td>9 -10.</td>
<td>L. Transform Circuit Applications etc..</td>
<td>15.6, 16.1 - 16.4</td>
<td><strong>II EXAM</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Chapters 6-8, 16</strong></td>
<td>9.4 - 9.7</td>
<td>B/In9*, 9.1-9.3</td>
</tr>
<tr>
<td>11 -12.</td>
<td>Sinusoidal Steady State</td>
<td>10.2 - 10.7</td>
<td>B/In10*</td>
</tr>
<tr>
<td></td>
<td>Average Power, RMS. Mutual Inductance</td>
<td>11.2 - 11.4</td>
<td>B/In11*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13.1 - 13.2</td>
<td></td>
</tr>
<tr>
<td>13 -14.</td>
<td>Mutual Inductance, Linear and Ideal Transformer Frequency Response</td>
<td>13.2 - 13.6</td>
<td>B/In13*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14.2, 14.5, 14.6</td>
<td>B/In14*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14.9</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>III Exam</strong></td>
<td></td>
<td><strong>Chapters 9-11, 13, 14</strong></td>
</tr>
</tbody>
</table>
15. **COMP FINAL EXAM - Chapters 2 - 11, 13 - 16.** All

Each class exam will be of 75 minutes duration and will be given in the beginning of the class.

**Comprehensive Exam. Chapters 2 - 11, 13 - 16.**

**Comprehensive Final Exam:** Monday, July 21, 4:30 p.m. - 7:15 p.m. Chapters 1 - 11, 13 - 16. Please check the SUMMER schedule.

**Please note that June 18, 2008 is the last date to drop.**

**Please note that lab is an integral part of the course. If you miss many lab sessions your grade will go down; you may even receive failing grade in the course.**

*B/In = Biography/Introduction/Chapter Sections*
TEST TIPS

* Print your Name *VERY CAREFULLY* on First Sheet/Question sheet

* 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.

1. Buy, beg or steal a stapler to fasten homework pages together. Unstapled HWs will not be accepted.

2. Print your name carefully in UPPER CASE LETTERS and write last three digits of your student number.

3. Use only standard (8 ½ 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. 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 you may not get any credit for that problem.

12. In the beginning of the class, if needed, homework problems will be discussed.

13. SHOW ALL THE WORK NEATLY.
B. Other considerations

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

2. Attack problems yourself, but work with others to master the material if you get stuck. The work you turn in however, is to be your own, not a copy of someone else's efforts.

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

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

**IMPORTANT:** Please note it is the university policy that all sound emitting devices shall be turned off during classes unless otherwise authorized by the instructor.