SYLLABUS

HARDING UNIVERSITY
DEPARTMENT OF COMPUTER SCIENCE/COMPUTER ENGINEERING

ENGR 220 – CIRCUITS I
FALL 2006

INSTRUCTOR:
Jonathan White
Office: SCI 212
Office Hours: MWF – 3 to 5; T – 9 to 10, 3 to 5; TH – 9 to 10
Phone: Office – 279-5713; Home: 593-3673
E-Mail: white@harding.edu

MEETING TIME AND PLACE:
Location: Lecture – SCI 206, Lab – SCI 219
Lecture: MWF – 2:00 to 2:50
Lab: Thursday – 2:30 to 5:20
Final: Tuesday, December 12, 10:30 AM

COURSE DESCRIPTION:
Topics include the fundamental properties of electrical circuits; basic concepts and circuit elements; analysis methods and network theorems; analysis of transient circuits. A detailed topic schedule is attached.

TEXTBOOK:
Fundamentals of Electric Circuits, 3rd Edition
by Alexander and Sadiku
Published by McGraw Hill
ISBN: 0-07-297718-3

ATTENDANCE:
Attendance is required and will be recorded at all lectures and labs after the first week of class. If you need to be absent, please let me know before hand. Your final grade will be reduced by .5 % for every unexcused absence after the third unexcused absence.

STUDENTS WITH DISABILITIES:
It is the policy for Harding University to accommodate students with disabilities, pursuant to federal and state law. Therefore, any student with a documented disability condition (e.g., physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the instructor and Student Support Services at the beginning of the semester. SSS is located in Room 109 of the Lee Academic Center (279-4028).
GRADING:

Your grade will be based on the following:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1</td>
<td>10 %</td>
</tr>
<tr>
<td>Test 2</td>
<td>15 %</td>
</tr>
<tr>
<td>Test 3</td>
<td>15 %</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20 %</td>
</tr>
<tr>
<td>Homework Assignments</td>
<td>15 %</td>
</tr>
<tr>
<td>Final Presentation/Report</td>
<td>8 %</td>
</tr>
<tr>
<td>Labs</td>
<td>15 %</td>
</tr>
<tr>
<td>Attendance</td>
<td>2 %</td>
</tr>
</tbody>
</table>

-------------------------------------------------------------

Total                                           100%

The grading scale will be as follows:

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 - 100</td>
<td>A</td>
</tr>
<tr>
<td>80 – 89</td>
<td>B</td>
</tr>
<tr>
<td>70 – 79</td>
<td>C</td>
</tr>
<tr>
<td>60 – 69</td>
<td>D</td>
</tr>
<tr>
<td>&lt; 60</td>
<td>F</td>
</tr>
</tbody>
</table>

FINAL REPORT/PRESENTATION:

Each of you will write a report on one of the topics that we have discussed in class, or something that relates to circuits. This report should be at least 3 pages typed, with one inch margins, and with a separate title page. You will also make a presentation to the class that will be no longer than ten minutes on the topic that you’ve chosen.

We will choose topics right before fall break. Your classmates and I will be grading you on the difficulty of your topic, the content of your presentation, and your presentation skills.

The point of this project is to give you experience researching an engineering topic, and also to gain experience presenting before a group. The report (which I will grade) will count for 50% of your grade for the report. My grade for your presentation will count for 25% and the class average for your presentation will count for the remaining 25% of the grade that you will receive.
Approximate Schedule:

- Syllabus/Schedule/History of Electronics
- Basic electronic elements; focus on resistors
- Homework 1
- Resistors in series and parallel
- Homework 2
- Kirchoff’s laws
- Nodal analysis; mesh currents
- Homework 3
- Test 1
- Thevenin and Norton equivalents
- Superposition
- Homework 4
- Capacitors; RC circuits
- Filter Circuits
- Homework 5
- Inductors
- RL circuits
- Homework 6
- Test 2
- RLC circuits
- Homework 7
- Op Amps – Introduction
- Op Amp applications
- Homework 8
- Op Amp applications 2
- Analog computers
- Homework 9
- Test 3
- Phasor Mathematics
- Introduction to AC Circuits
- Homework 10
- Final Comprehensive Exam