AMERICAN UNIVERSITY OF BEIRUT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

EECE 200 - INTRODUCTION TO ELECTRICAL AND COMPUTER ENGINEERING

Fall 2008 - 2009

COURSE SYLLABUS

CATALOG DESCRIPTION

Overview of electrical and computer engineering; engineering as a profession; introduction to the different areas of ECE such as biomedical systems, circuits & electronics, communications, hardware design, control, networks and distributed systems, electromagnetics, energy, machines, signal processing, and software; basic computer tools such as SPICE, MATLAB, and LabVIEW; basic laboratory instruments; laboratory experiments and design project.

PREREQUISITES

High-school mathematics and physics

CLASS/LABORATORY SCHEDULE

Lecture: 2 hours per week
Laboratory: 3 hours per week

CLASS

Tuesday and Thursday 8:00 - 9:15 AM in the Auditorium of the Charles Hostler Student Center

LAB

Tuesday or Thursday, 9:30 AM - 12:30 PM in the ECE and FEA Labs

COORDINATOR

Ayman Kayssi
Office: Room 404 – Raymond Ghosn Building
Office Hours: Wed 9:30 – 11:00 AM and 12:00 – 1:30 PM, and by appointment
Extension: 3499
Email: ayman@aub.edu.lb
LAB INSTRUCTORS

Khaled Joujou (mj07@aub.edu.lb)
Ghassan Deeb (gd00@aub.edu.lb)
Sara Khaddaj (sk56@aub.edu.lb)

TEXTBOOK


REFERENCES ON RESERVE IN THE ENGINEERING LIBRARY

1. Introduction to Electrical Engineering, Sarma, Oxford University Press, 2001 (621.3:S246i)
2. Introduction to Electrical and Computer Engineering, Fleddermann and Bradshaw, Prentice Hall, 2003

COMPUTER RESOURCES

1. Moodle
2. PSpice
3. LabVIEW
4. MATLAB
5. MS Office
6. Xilinx ISE

TOPICS COVERED

<table>
<thead>
<tr>
<th>TOPICS COVERED</th>
<th>50 MIN. LECTURES</th>
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<tbody>
<tr>
<td>1. Engineering as a Profession</td>
<td>10</td>
</tr>
<tr>
<td>2. ECE Tools</td>
<td>5</td>
</tr>
<tr>
<td>3. ECE Areas</td>
<td>12</td>
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</tbody>
</table>

COURSE OBJECTIVES

The objectives of this course are to:

1. Introduce students to the engineering profession
2. Provide students with an overview of engineering ethics
3. Present to the students the various areas of electrical and computer engineering
4. Introduce students to some basic mathematical and computing tools used in electrical and computer engineering
5. Foster effective communication and teamwork skills among students
LEARNING OUTCOMES

At the end of the course, students:

1. Have a realistic understanding of the engineering profession and the working environment of engineers.
2. Understand engineering ethics and are familiar with the IEEE code of ethics
3. Understand engineering problem-solving concepts and principles
4. Demonstrate an understanding of the engineering design concepts and principles
5. Have developed an awareness of challenges occurring in teamwork
6. Appreciate the importance of project planning and scheduling
7. Have developed presentation skills
8. Are able to locate reliable sources of information
9. Are aware of the various areas of electrical and computer engineering
   a. Circuits and Electronics
   b. Energy
   c. Communications
   d. Electromangetics and Radio Frequency
   e. Signal and Image Processing
   f. Computer Hardware
   g. Computer Software
   h. Networks and Distributed Systems
   i. Control
   j. Machines
   k. Biomedical Engineering
10. Are familiar with the use of SPICE as a circuit analysis tool
11. Are familiar with the use of LabVIEW as a virtual instrumentation tool
12. Are familiar with the use of MATLAB as a mathematical tool
13. Are familiar with the use of MS Office for document production and presentation
14. Are familiar with the use of Xilinx ISE tools for digital system design

ASSESSMENT

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Weight</th>
<th>Group</th>
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<tbody>
<tr>
<td>Final exam</td>
<td>33%</td>
<td>individual</td>
</tr>
<tr>
<td>Computer assignments (6)</td>
<td>6 x 3% = 18%</td>
<td>individual</td>
</tr>
<tr>
<td>Homework assignments (4)</td>
<td>4 x 3% = 12%</td>
<td>individual</td>
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<tr>
<td>Lab experiments (5)</td>
<td>5 x 3% = 15%</td>
<td>teams of two</td>
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<tr>
<td>Project</td>
<td>20%</td>
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<tr>
<td>Contribution to online discussions</td>
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<td>individual</td>
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<tr>
<td>Assessment of course outcomes</td>
<td>1%</td>
<td>individual</td>
</tr>
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