Course Syllabus

Instructor: Haibo Wang, Room: ENGR E-116, Tel: 453-1522, zhwang@siu.edu
Office Hours: Tuesday and Thursday 2:30 PM - 4:30 PM, Friday 2:30-4:30PM


Course Time/Place:
Lecture: Tuesday & Thursday 11:00AM - 12:15 PM ENGR A-220

Course website: http://www.engr.siu.edu/~haibo/ece543

Course Description:
The goal of the course is to cover fundamentals in CMOS analog VLSI design. After successfully completing the course, it is expected that students will gain the necessary knowledge and hands-on experiences to design basic analog components, such as single-stage and operational amplifiers. In addition to lectures, lab sessions and a class project will be used to help students learn the materials. Cadence EDA tools will be the primary CAD tool used in the lab sessions and the class project.

Topics:
1. MOS device characterizes
2. Single-stage amplifiers
3. Current mirror
4. Operational amplifiers
5. Frequency response of amplifiers
6. Stability and frequency compensations techniques
7. Circuit noise and low-noise circuit design
8. Feedback theories and their applications in analog circuit design
9. Micro-power analog circuits
10. Non-linearity & mismatches in analog circuits

Exam Schedule:

Midterm 3/8/11
Final Exam 5/9/11
Grading Policy

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Homework</td>
<td>5%</td>
</tr>
<tr>
<td>Labs</td>
<td>15%</td>
</tr>
<tr>
<td>Class Project</td>
<td>20%</td>
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<tr>
<td>Midterm</td>
<td>25%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>35%</td>
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</tbody>
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A: 100-86,  B: 85-65,  C: 64-50,  F: <50

Class Policy:

1. No late homework, lab & project reports will be accepted except rare cases.
2. No early or makeup exams will be given except rare cases.
3. Rare cases are medical conditions (with Doctors’ notes), family emergency, and religious observations. Note that leaving school early for winter break is not qualified as a rare case.

Lab & Project

1. Five labs will be assigned.
2. One class project will be assigned (designing an operational transconductance amplifier).
3. Groups need to be formed to carry out labs and the project. Each group can at most have two students.

Subscription to Blackboard

Assignment, exam solutions and supplementary materials will be posted in Blackboard. Having access to Blackboard system is required.