ECE 7021 (Approved): Analog VLSI Design

Course Description
Advanced analog VLSI design, chip design, validation and tools, chip design projects: analog, digital, RF and mixed signal integrated circuits and systems.

Prior Course Number: ECE 820
Transcript Abbreviation: Analog VLSI Design
Grading Plan: Letter Grade
Course Deliveries: Classroom
Course Levels: Graduate
Student Ranks: Masters, Doctoral
Course Offerings: Spring
Flex Scheduled Course: Never
Course Frequency: Even Years
Course Length: 14 Week
Credits: 3.0
Repeatable: No
Time Distribution: 2.0 hr Lec, 1.0 hr Lab
Expected out-of-class hours per week: 6.0
Graded Component: Lecture
Credit by Examination: No
Admission Condition: No
Off Campus: Never
Campus Locations: Columbus
Prerequisites and Co-requisites: Prereq: 5020 (721) or 5021 (720 and 722), or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences.
Exclusions: Not open to students with credit for 820.
Cross-Listings:

Course Rationale: Existing course.

The course is required for this unit's degrees, majors, and/or minors: No
The course is a GEC: No
The course is an elective (for this or other units) or is a service course for other units: Yes

Subject/CIP Code: 14.1001
Subsidy Level: Doctoral Course

Course Goals

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<th>Learn design techniques of analog VLSI circuits</th>
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<td>Design a VLSI chip at the circuit and layout levels, analog, digital, RF or mixed signal, and submit it over the internet for fabrication</td>
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<td>Provide students an opportunity to practice team work and communicate their design experience orally and in writing</td>
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Course Topics

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<th>Topic</th>
<th>Lec</th>
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<th>IS</th>
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<tr>
<td>Graphical MOS models in all regions (strong, weak and moderate inversion)</td>
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<td>CMOS current division principle</td>
<td>2.0</td>
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Students are encouraged to enroll for one credit hour of independent study after the course to test the chips after fabrication. Student do not need to buy the text; there will be handouts.
Changed abbrev, prerq, exclusions, goals and topics to conform to university format.
3/29/12

Prepared by: Betty Lise Anderson