



SACRAMENTO
STATE

Course Change Proposal Form A



Academic Group (College): Engineering & Computer Science	Academic Organization (Department): Electrical & Electronic Engineering	Date: 10/13/2008
Type of Course Proposal: New ___ Change <u>X</u> Deletion ___	Department Chair: Dr. Suresh Vadhva	Submitted by: Dr. Suresh Vadhva
Does this course fulfill a requirement for single-subject or multiple subject credential students? Yes <u>X</u> No ___	For Catalog Copy: Yes <u>X</u> No ___ CCE (Extension): Yes ___ No ___	Semester Effective: Fall ___ Spring <u>X</u> , 2009__

This course replaces experimental course Subject Area (prefix) and Catalog Nbr (course number):	
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Change from:

Subject Area (prefix) & Catalog Nbr (course no.): EEE 108L	Title: Electronics Laboratory I	Units: 1
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Change to:

Subject Area (prefix) & Catalog Nbr (course no.):	Title:	Units:
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JUSTIFICATION:

Prerequisite change only. From EEE 117, EEE 117L, EEE 166; Corequisite EEE 108 to EEE 117, EEE 117L; Corequisite EEE 108. There will be no change to the course description or content. At many institutions, the device physics course (our EEE 166) is taught after an introductory electronics course (our EEE 108/108L). The justification is that the students are better prepared to deal with the advanced physics principles governing device operation after they learn the basic behavior of the device. The EEE Department believes that our students will learn more in EEE 166 using this approach. The physics required before EEE 108 is contained in basic physics courses.

NEW COURSE DESCRIPTION: (Not to exceed 80 words and language should conform to catalog copy. See <http://www.csus.edu/acaf/univmanual/crspsl.htm> - Guidelines for Catalog Course Description)

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Note:

Prerequisite: EEE 117 and 117L
Enforced at Registration: Yes X No ___

Corequisite: EEE 108
Enforced at Registration: Yes X No ___

CAN (California Articulation Number):

Graded: Letter X Credit/No Credit ___ **Instructor Approval Required? Yes ___ No X**

Course Classification (e.g., lecture, lab, seminar, discussion):
C16 **Title for CMS (not more than 30 characters)**
Electronics Lab I

Cross Listed?
Yes ___ No X **If yes, do they meet together and fulfill the same requirement, and what is the other course.**

How Many Times Can This Course be Taken for Credit? ___1___

Can the course be taken for Credit more than once during the same term? Yes ___ No X

FOR NEW COURSE PROPOSALS OR SUBSTANTIVE CHANGES ONLY:

Description of the Expected Learning Outcomes: Describe outcomes using the following format: "Students will be able to: 1), 2), etc." See the example at <http://www.csus.edu/acaf/example.htm>

****Attach a list of the required/recommended course readings and activities [Note: it is understood that these are updated and modified as needed by the instructor(s).] This attachment should be forwarded only to your Dean's office, not Academic Affairs.**

Assessment Strategies: A description of the assessment strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers) which will be used by the instructor to determine the extent to which students have achieved the learning outcomes noted above:

For whom is this course being developed?

Majors in the Dept ___ Majors of other Depts. ___ Minors in the Dept ___ General Education ___ Other ___

Is this course required in a degree program (major, minor, graduate degree, certificate)? Yes ___ No ___

If yes, identify program(s):

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer facilities, faculty, etc.)? Yes ___ No ___

If yes, attach a description of resources needed and verify that resources are available.

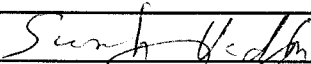
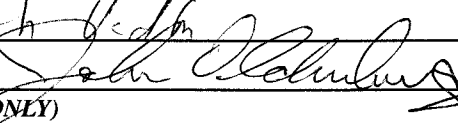
Indicate which department or programs will be affected by the proposed course (if any). _____

The Department Chair's signature below indicates that affected programs have been sent a copy of this proposal form.

Approvals: If proposed change, new course or deletion is approved, sign and date below. If not approved, forward without signing to the next reviewing authority, and attach an explanatory memorandum to the original copy.

Signatures:

Date

Department Chair: 	11/21/2008
College Dean or Associate Dean: 	11/21/08
CPSP (for school personnel courses ONLY)	
Associate Vice President and Dean for Academic Programs	

Distribution: Academic Affairs (original), Department Chair and College Dean. Dean's office to send original after approval to Academic Affairs, at mail zip 6016. An electronic copy must also be sent.

EEE 108L ELECTRONICS I LABORATORY

Required Course

2008-2010 Catalog Data: EEE 108L. Electronics I Laboratory. Characteristics and applications of OP-AMPS, rectifiers, BJTs, and FETs. Introduction to GPIB, and PSPICE and LabVIEW. Laboratory three hours. Prerequisite: EEE 117, EEE 117L; Corequisite 108 1 unit.

Text: Sedra and Smith, Microelectronic Circuits, Oxford Press, 4th Edition, 1998 and Herniter, Schematic Capture Using Cadence PSPICE, Prentice Hall, 2001.

Support Software: Cadance, Multisim, C++, Excel.

Course Objectives:

1. The students will be able to write acceptable laboratory reports. An acceptable report will include laboratory procedure, resulting data, and conclusions based on the experiment.
2. The students will use computer-aided circuit simulations to design and verify their experimental results.
3. Reinforce the principles being studied concurrently in EEE 108.
4. The students will work independently and in groups on a project.

Prerequisites by Topic:

1. Use of common laboratory electronic instrumentation.
2. Circuit analysis.
3. Frequency response and Bode diagrams.
4. Basic SPICE capabilities.

Topics Covered/Laboratory Schedule/Evaluation:

Topics/Laboratory Schedule:

<u>Week</u>	<u>Laboratory Experiment</u>
1	Introduction
2 & 3	Operational Amplifiers
4, 5 & 6	Diodes
7, 8 & 9	BJTs
10 & 11	FETs
13 & 14	BJT or FET design

Evaluation:

Each of the laboratory reports are of equal value. The EEE 108L laboratory grade is determined independently from the EEE 108 lecture grade.

Contribution of Course to the Professional Education Component:

- This laboratory introduces the students to the latest electronic instrumentation.
- The extensive use of SPICE to verify experimental results introduces the students to the most popular circuit simulation available today. The students are instructed to verify circuit operation by SPICE before constructing the actual circuit – a standard practice in industry.
- The laboratory reports require each student to write quality reports with the use of word-processing and graphical packages.

- The oral presentation of the op-amp project provides the students with a forum for oral presentations.
- Science and Design Content Distribution: Science - 2 units or 66%; Design - 1 unit or 33%.

Relationship of Course to Program Outcomes:

- #3. Problem solving: This course applies the fundamentals of circuit analysis to circuits with semiconductor devices. Solutions by sinusoidal steady state methods are used.
- #4. Knowledge of core EEE topics: This course teaches the fundamentals of electronic devices and circuits. This course reinforces the use of many of the analysis techniques taught in EEE 117.
- #7. Use contemporary tools for analysis and design: The course teaches use of large- and small-signal models for the analysis of semiconductor circuits. Computer-aided circuit simulation software (e.g., SPICE) is used to design and verify circuits.
- #8. Experimental work: This course emphasizes the use of the most common laboratory instruments.
- #10. Teamwork: The students work in groups.
- #11. Written communication: The students are required to turn in laboratory reports during the semester. Grading of the reports places roughly equal emphasis on the technical content and the written presentation.
- #12. Oral communication: Students present an oral review of a project to the class.

Course Coordinator: Tom Matthews

Date: November 13, 2008

EEE 108L ELECTRONICS I LABORATORY

Required Course

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Text: Sedra and Smith, Microelectronic Circuits, Oxford Press, 4th Edition, 1998 and Herniter, Schematic Capture Using Cadence PSPICE, Prentice Hall, 2001.

Support Software: Orcad Lite PSPICE version 9.2, C++, Excel.

Course Objectives:

1. The students will be able to write acceptable laboratory reports. An acceptable report will include laboratory procedure, resulting data, and conclusions based on the experiment.
2. The students will use computer-aided circuit simulations to design and verify their experimental results.
3. Reinforce the principles being studied concurrently in EEE 108.
4. The students will work independently and in groups on a project.

Prerequisites by Topic:

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Course Coordinator: Tom Matthews

Date: January 15, 2008