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 _X_ 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 _X_ No ___

For Catalog Copy: Yes _X_ No ___
CCE (Extension): Yes ___ No ___
Semester Effective:
Fall ___ Spring _X_ 2009___

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

<table>
<thead>
<tr>
<th>Change from:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Area (prefix) &amp; Catalog Nbr (course no.):</td>
<td>Title:</td>
</tr>
<tr>
<td>EEE 108L</td>
<td>Electronics Laboratory I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Change to:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Area (prefix) &amp; Catalog Nbr (course no.):</td>
<td>Title:</td>
</tr>
</tbody>
</table>

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/crpsl.htm - Guidelines for Catalog Course Description)

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: | 11/21/12 |
| College Dean or Associate Dean: | 11/21/12 |
| CPSP (for school personnel course ONLY) | 11/21/12 |
| Associate Vice President and Dean for Academic Programs | 11/21/12 |

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.

8/27/07
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.


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:

<table>
<thead>
<tr>
<th>Week</th>
<th>Laboratory Experiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
</tr>
<tr>
<td>2 &amp; 3</td>
<td>Operational Amplifiers</td>
</tr>
<tr>
<td>4, 5 &amp; 6</td>
<td>Diodes</td>
</tr>
<tr>
<td>7, 8 &amp; 9</td>
<td>BJTs</td>
</tr>
<tr>
<td>10 &amp; 11</td>
<td>FETs</td>
</tr>
<tr>
<td>13 &amp; 14</td>
<td>BJT or FET design</td>
</tr>
</tbody>
</table>

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

2006-2008 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, EEE 166; EEE 108 may be taken concurrently. 1 unit.


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:

<table>
<thead>
<tr>
<th>Week</th>
<th>Laboratory Experiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
</tr>
<tr>
<td>2 &amp; 3</td>
<td>Operational Amplifiers</td>
</tr>
<tr>
<td>4, 5 &amp;6</td>
<td>Diodes</td>
</tr>
<tr>
<td>7, 8 &amp; 9</td>
<td>BJTs</td>
</tr>
<tr>
<td>10 &amp; 11</td>
<td>FETs</td>
</tr>
<tr>
<td>13 &amp; 14</td>
<td>BJT or FET design</td>
</tr>
</tbody>
</table>

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: January 15, 2008