Course Change Proposal
Form A

<table>
<thead>
<tr>
<th>Academic Group (College): Engineering and Computer Science</th>
<th>Academic Organization (Department): Electrical &amp; Electronic Engineering</th>
<th>Date: March 11, 2010</th>
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<tbody>
<tr>
<td>Type of Course Proposal:</td>
<td>Department Chair: Suresh Vadhva</td>
<td>Submitted by: Fethi Belkhouche</td>
</tr>
<tr>
<td>New x Change ___ Deletion ___</td>
<td>For Catalog Copy: Yes x No ___</td>
<td>Semester Effective: Fall X Spring __, 2010</td>
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<tr>
<td>Does this course fulfill a requirement for single-subject or multiple subject credential students? Yes ___ No x</td>
<td>CCE (Extension): Yes ___ No x</td>
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This course replaces experimental course Subject Area (prefix) and Catalog Nbr (course number):

If changing an existing course, should new version be considered a repeat of the original version? If so, the same Course ID will be maintained. If not, a new Course ID will be assigned. Note: In PeopleSoft terminology, the Course ID is the unique system identifier, not the Catalog Nbr.

Yes ___ No ___

Change from:

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

<table>
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<tr>
<th>Subject Area (prefix) &amp; Catalog Nbr (course no.):</th>
<th>Title:</th>
<th>Units:</th>
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JUSTIFICATION:

This course is an elective with emphasis on machine vision for robotics applications. It is particularly important for students in the area to have a broad understanding of the basics of machine vision and apply machine vision algorithms to robotics problems.

NEW COURSE DESCRIPTION: (Not to exceed 80 words, and language should conform to catalog copy. See http://www.csus.edu/umanual/acad.htm - Guidelines for Catalog Course Description

Fundamental digital image processing and machine vision concepts and their application to the fields of robotics and automation. Topics include: digital image processing, image formation, two dimensional transforms, boundary descriptors, motion, camera calibration, vision for robot control, 3-D vision, and hardware architectures to support vision.

Note:

Prerequisite: EEE 180 or ME 172 or instructor’s approval
Enforced at Registration: Yes X No ___

Corequisite:
Enforced at Registration: Yes ___ No ___

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

Course Classification (e.g., lecture, lab, seminar, discussion):
Lecture

Title for CMS (not more than 30 characters)
Intro to Machine Vision

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/aacd/example.htm

- Describe the principles of image processing and machine vision.
- Analyze and apply algorithms of image processing to machine vision.
- Apply machine vision techniques to robot motion planning and tracking problems.
- Use mathematical tools and models to design, formulate and solve machine vision problems.

**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:

- Homework and quizzes
- Two in class exams and a final exam
- Semester long project

For whom is this course being developed:

Majors in the Dept. x _  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). None

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

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<tr>
<th>Department Chair:</th>
<th>4/23/2010</th>
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<tbody>
<tr>
<td>College Dean or Associate Dean:</td>
<td>4/23/10</td>
</tr>
<tr>
<td>CPSP (for school personnel courses ONLY)</td>
<td></td>
</tr>
<tr>
<td>Associate Vice President and Dean for Academic Programs</td>
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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.

9/10/2008
California State University, Sacramento
COLLEGE OF ENGINEERING AND COMPUTER SCIENCE

COURSE APPROVAL CHECKLIST

Please answer all questions (enter NA if not applicable)

1. Course number and title: EEE 178, Machine vision
2. Old course number and:
3. Name of person in Charge: Fethi Belkhouché
4. Is the course __required ___elective ___service/GE
5. Check as appropriate: ___change from 96/196/296
   ___change in description to reflect change in content
   ___change in prerequisite
   ___change in course format (e.g. lectures to lecture/lab)
   ___minor editing change in description
   ___change in number
   ___change in title
6. If offered as 96/196/296: ___number of times ___average enrollment
7. Does the proposed change or addition cause a significant increase in the use of School or University resources (lab room, computer facilities, faculty, etc.)? ___No____. If yes, attach description of resources needed, including lab room number if appropriate, and verify that these resources are available.
8. For all changes (except change in number, title, or minor editing change in description) attach and check off here:
   ___X___detailed syllabus ___justification ___old description
9. If there are related course changes, state numbers here and submit as a package
10. Date of department curriculum committee approval (if any) ___.
11. Date of department faculty approval (if any) ___.

FOR NEW COURSES (Including changes from 96/196/296)

Is the course related to or similar to any existing course? ___Yes____ If so include explanation with justification.

Describe the target group of students. EEE undergraduate students

NOTE:

1. Syllabus should include title, author and date of text, name of instructor, main topics, amount or percentage of time devoted to each, description of special features such as term projects, and ABET or CSAB content category.
2. For required courses the justification must indicate how the new course fits into the overall curriculum and why changes are being made or the new course is being added.