Course Change Proposal
Form A

<table>
<thead>
<tr>
<th>Academic Group (College):</th>
<th>Academic Organization (Department):</th>
<th>Date: 9/29/2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering &amp; Computer Science</td>
<td>Mechanical Engineering</td>
<td></td>
</tr>
<tr>
<td>Type of Course Proposal:</td>
<td>Department Chair:</td>
<td>Submitted by:</td>
</tr>
<tr>
<td>New ___ Change ___ Deletion <em>X</em></td>
<td>Susan L. Holl</td>
<td>Kenneth Sprott</td>
</tr>
<tr>
<td>Does this course fulfill a requirement for single-subject or multiple subject credential students? Yes ___ No <em>X</em></td>
<td>For Catalog Copy: Yes <em>X</em> No ___</td>
<td>Semester Effective:</td>
</tr>
<tr>
<td></td>
<td>CCE (Extension): Yes ___ No <em>X</em></td>
<td>Fall <em>X</em> Spring __, 2011</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>
</tr>
</thead>
</table>

Change to:

<table>
<thead>
<tr>
<th>Subject Area (prefix) &amp; Catalog Nbr (course no.):</th>
<th>Title:</th>
<th>Units:</th>
</tr>
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<tbody>
<tr>
<td>ME 119</td>
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**JUSTIFICATION:**

ME 119 was a required course but is no longer part of the Mechanical Engineering BS curriculum because this material is covered in other more relevant, modern required courses (ME 116, 117).

**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)

Note:

<table>
<thead>
<tr>
<th>Prerequisite:</th>
<th>Enforced at Registration: Yes ___ No ___</th>
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</thead>
<tbody>
<tr>
<td>Corequisite:</td>
<td>Enforced at Registration: Yes ___ No ___</td>
</tr>
<tr>
<td>Graded: Letter ___ Credit/No Credit ___</td>
<td>Instructor Approval Required? Yes ___ No ___</td>
</tr>
<tr>
<td>Course Classification (e.g., lecture, lab, seminar, discussion):</td>
<td>Title for CMS (not more than 30 characters)</td>
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<tr>
<td>Cross Listed?</td>
<td>Yes ___ No ___</td>
</tr>
<tr>
<td>How Many Times Can This Course be Taken for Credit? ___</td>
<td></td>
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<tr>
<td>Can the course be taken for Credit more than once during the same term? Yes ___ No ___</td>
<td></td>
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</table>
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.

Accessibility: Following course approval, and prior to the start of the semester in which the new or revised course will be taught for the first time, an accessibility checklist [available at http://www.csus.edu/accessibility/checklist.html] shall be completed and submitted to the appropriate Dean's office. An accessible syllabus shall also be made available online, preferably prior to the start of that semester's open registration period.

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:  
Department Chair: Susan L. Holl  
College Dean or Associate Dean:  
CPSP (for school personnel courses ONLY)  
Associate Vice President  
and Dean for Academic Programs

Date
9/29/2010  
10/18/10

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.

5/20/2010
COURSE TITLE: ME 119 Product Design II.

CATALOG DESCRIPTION:

Detail design of machine components; application of analytical methods in the design of complex machines. Failure mode analysis, theories of failure, yield, fracture, deflection, and fatigue analysis of machine elements. Introduction to computer methods of stress and deflection analysis using finite element analysis (FEA). Factors of safety in design, detail design methods for specific components such as bearings and gears. Start of senior design project. Lecture two hours; laboratory three hours. 3 units.

PREREQUISITES:
ME 075, ME 118, ENGR 112. 3 units.

TEXT:

OPTIONAL: None

GOALS:

Understanding the design of machine components using stress analysis, static and fatigue failure, and finite element analysis; obtaining the skills needed to solve problems in the design of mechanical machinery; ability to perform the design calculations for common machines.

OBJECTIVES:

By The end of the semester the students will be able to:

1. Select common materials needed to manufacture machine elements.
2. Do static analysis of machine components.
3. Find principal stresses for combined loading of machine parts.
4. Perform static and fatigue failure analysis of complex parts.
5. Do stress analysis of simple parts using finite element analysis.
6. Design machine parts which are commonly manufactured.
7. Select specialized machine components which are usually purchased.
8. Perform reverse engineering of small devices.

TOPICS COVERED:

Material selection for machine components
Statics of machine parts
Principal stresses and Mohr’s circle
Static and fatigue failure
Design of shafts with combined loadings.
Rolling contact bearings
Gears
Springs
Bolted joints
Clutches and brakes.
Finite element analysis using ALGOR software

CLASS SCHEDULE:

<table>
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<tr>
<th>Class meetings</th>
<th>Laboratory Exams</th>
<th>Reports</th>
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<tbody>
<tr>
<td>Two 75 min or three 50-min lectures/week</td>
<td>One 150 minute 2 in exams Reverse engineering</td>
<td>Final exam report</td>
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</table>

PROFESSIONAL COMPONENT:

This is an engineering design course

RELATIONSHIP TO ME OUTCOMES:

This course is related primarily to the following outcomes:

a. Demonstrate a knowledge of the science, mathematics, and engineering principles that are fundamental to thermal and mechanical systems design and manufacturing;

c. Apply creativity in design of systems, components, or processes to meet desired needs.

e. Identify, analyze, and solve technical problems in the areas of machine design, including solid mechanics and control systems; fluid mechanics, thermodynamics, and heat transfer, materials properties and selection; and manufacturing, using the principles of multivariate calculus and differential equations, including the appropriate use of computer technology;

It is slightly related to the following outcomes:

d. Function effectively as part of a team

g. Communicate effectively through speaking, writing and graphics, including appropriate use of computer technology.

COORDINATOR: Ilhan Tuczu

Date: Fall 2008