



SACRAMENTO
STATE

Course Change Proposal Form A



Academic Group (College): Engineering and Computer Science	Academic Organization (Department): Mechanical Engineering	Date: March 12, 2009
Type of Course Proposal: New ___ Change <u>X</u> Deletion ___	Department Chair: Susan L. Holl	Submitted by: Jose J. Granda
Does this course fulfill a requirement for single-subject or multiple subject credential students? Yes ___ No <u>X</u>	For Catalog Copy: Yes <u>X</u> No ___ CCE (Extension): Yes ___ No <u>X</u>	Semester Effective: Fall <u>X</u> Spring ___, 2009 __

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 <u>X</u> No ___

Change from:

Subject Area (prefix) & Catalog Nbr (course no.): ME 115	Title: Dynamics of Machinery	Units: 3
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Change to:

Subject Area (prefix) & Catalog Nbr (course no.): ME 115	Title: Dynamics of Machinery and Muti-Body Systems	Units: 3
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JUSTIFICATION:

Course description has not been updated since 1990. Course is being updated to reflect new advances in software tools to analyze dynamics of machinery and two and three dimensional multi-body systems.

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

Kinematic and kinetic analysis of mechanisms. Rigid and flexible multi-body assembly models in two and three dimensions. Use of solid modeling, dynamic analysis and finite element methods. Study of loads on linkages, cams, gears as integral functioning components of machines, ground and space vehicles. Study of forces and moments in machinery under impulsive and impact forces, balancing, and elements of vibration.

Note:

Prerequisite: ENGR 110, ME 105
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):**
Mach Dynamics Muti-Body System

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>

Students will be able to:

- 1) Use analysis and techniques learned in solid modeling and basic dynamics to develop computer models of linkages and complete working assemblies in two and three dimensions.
- 2) Transform solid models into dynamic analysis models to analyze kinematics, (velocities and accelerations), kinetics (forces and moments).
- 3) Perform simulations of rigid multi-body assemblies and calculation of loads, dynamic forces, energy and momentum.
- 4) Analyze forces and moments in two and three dimensions under impulsive impact forces and collisions.
- 5) Describe basic concepts of vibrations and balancing principles.
- 6) Perform simulations to obtain Finite Element Analysis under dynamic loads.
- 7) Apply these techniques to machinery, vehicles, cranes, engines, and any device or assembly that has moving parts in two and three dimensions.

****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:

Students will be assessed by quizzes, exams and their final project including an oral presentation and written report.

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: <i>Susan R. Hall</i>	4/24/09
College Dean or Associate Dean: <i>John Polakung</i>	4/24/09
CPSP (for school personnel courses <i>ONLY</i>)	
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.