



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 <input checked="" type="checkbox"/> 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 <input checked="" type="checkbox"/>	For Catalog Copy: Yes <input checked="" type="checkbox"/> No ___ CCE (Extension): Yes ___ No <input checked="" type="checkbox"/>	Semester Effective: Fall <input checked="" type="checkbox"/> 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 <input checked="" type="checkbox"/> No ___

Change from:

Subject Area (prefix) & Catalog Nbr (course no.): ME 114	Title: Vibrations and Controls	Units: 3
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Change to:

Subject Area (prefix) & Catalog Nbr (course no.): ME114	Title: Vibrations	Units: 3
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JUSTIFICATION:

ME114 is being split into two courses. ME172 (Control Systems Engineering), a required class dealing mainly with control systems and ME114 (Vibrations) which deals mainly with vibrations and becomes an elective.

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)

Generation of equations of motion for single and multiple degrees of freedom systems. Study of natural frequencies, eigenvectors, free and forced response, modes of vibration and vibration control and isolation. Mechanical and structural vibrations with applications to rotating machinery and vehicles. Fundamentals of acoustics and the engineering of musical instruments.

Note:

Prerequisite: ENGR 110, ME 105
Enforced at Registration: Yes No ___

Corequisite:
Enforced at Registration: Yes ___ No ___

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

Course Classification (e.g., lecture, lab, seminar, discussion):
Lecture **Title for CMS (not more than 30 characters):**
Vibrations

Cross Listed?
Yes ___ No **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

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) Apply basic principles of vibrations including: free and forced vibrations, natural frequencies, eigenvectors, and modes of vibration.
- 2) Generate free body diagrams and their corresponding differential equations for single and multi-degree of freedom systems.
- 3) Solve sets of simultaneous differential equations of vibratory systems using software.
- 4) Use matrix methods to solve state space matrix representations of physical systems.
- 6) Design a vibration control and isolation system.
- 7) Apply vibration analysis to rotating machinery and vehicles.
- 8) Describe the fundamental relation between vibrations and acoustics with applications to the analysis of sound and musical instruments.

**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 K. Hoels</i>	4/24/09
College Dean or Associate Dean: <i>John Oberburg</i>	4/29/09
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.