



SACRAMENTO
STATE

Course Change Proposal Form A

Academic Group (College): ECS	Academic Organization (Department): Mechanical Engineering	Date: October 18, 2006
Type of Course Proposal: New <input checked="" type="checkbox"/> Change <input type="checkbox"/> Deletion <input type="checkbox"/>	Department Chair: Robin Bandy	Submitted by: Dongmei Zhou
Does this course fulfill a requirement for single-subject or multiple subject credential students? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	For Catalog Copy: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> CCE: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Semester Effective: Fall <input checked="" type="checkbox"/> Spring <input type="checkbox"/>, 2007 <input type="checkbox"/>

This course replaces experimental course Subject Area (prefix) and Catalog Number (course number):	ME296I
This Catalog Number (course number) is being replaced:	

Change from:

Subject Area (prefix) & Catalog No. (course no.): ME296I	Title: Introduction to Computational Fluid Dynamics	Units: 3
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Change to:

Subject Area (prefix) & Catalog No. (course no.): ME259	Title: Introduction to Computational Fluid Dynamics	Units: 3
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JUSTIFICATION:

Increase in the knowledge of students in computational fluid dynamics is desired in the Department of Mechanical Engineering. Graduate students and qualified senior level undergraduate students will learn to utilize the leading software packages to simulate and analyze a wide range of thermal-fluid systems. This course will also help to satisfy part of the accreditation requirement in ABET learning outcome C. This course was offered two times as an experimental course-ME296I, and was well received by students with a reasonable enrollment of 13 in Fall 2005 and 10 in Fall 2006 at the graduate level.

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

Fundamentals of computational fluid dynamics, modeling of physical processes, including the fluid flow, heat and mass transfer, and computer skills. Basic concepts of numerical analysis using computer, including the solutions of ordinary and partial differential equations. Basic hands-on experience on using commercial computational fluid dynamics software packages.

Note:

Prerequisite: ENGR132, ME126, and ME175.

Corequisite:

CAN (California Articulation Number):

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

Course Classification (e.g., lecture, lab, seminar, discussion):
C5 **Title for SIS+/CMS (not more than 30 characters)**
INTRO CMPTNL FLD DYNAMICS

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? One

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) Understand the basic theory behind discretization techniques used to solve differential equations. 2) Formulate the mathematical models that describe a thermal-fluid system. 3) Judge the accuracy of numerical solutions and estimate numerical uncertainty. 4) Use the software, FLUENT, to simulate and analyze various engineering 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:

The course assessment will consist of attendance, homework assignments, in-class examination, and term and final projects with report and presentation.

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

Signatures:	Date
Department Chair:	
College Dean or Associate Dean:	
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.