

COURSE MODIFICATION PROPOSAL

College: [**Engineering & Comp Sci**]

Department: [**Manufacturing Systems
Engineering & Mgmt**]

1. Current Catalog Entry Information:

Subject Abbreviation and Number: [**MSE 623**]

Course Title: [**Composite Materials**]

Units: [**3**] units

General Education Section [] (if applicable)

2. Date of Proposed Implementation: (Semester/Year): [**Fall**] / [**16**] *Comments*

3. Course Level:

☐ Undergraduate Only

☒ Graduate Only

☐ Graduate/Undergraduate

4. Nature of Request:

☐ Delete Course (*Note: Record of course will remain in inactive course file*)

☐ Change unit value from [] units to [] units

☐ Change course type (classification) such as lecture-discussion, laboratory, activity, etc.:

From: [] units @ [] to [] units @ []

From: [] units @ [] to [] units @ []

☐ Change course title to: []

☐ Change course abbreviation "Short title" (Maximum of 17 characters and spaces) to

NEW Short Title: []

☒ Change current catalog course description (*Attach current and proposed catalog course description*)

Notes: If grading is NC/CR only, please state in course description. If a course numbered less than 500 is available for graduate credit, please state "Available for graduate credit" in the catalog description.

☒ Change subject abbreviation number to: (*Example: HSCI 100 to PT 105*) [**MSE 523**]

☒ Change requisites (*Prerequisites, Corequisites, Preparatory, Recommended Corequisites*)

From: [**Instructor consent**]

To: [**Undergraduate course in strength of materials or equivalent**]

background, and instructor consent]

☐ Change Current Basis of Grading

From: ☐ Credit/No Credit Only

☐ Letter Grade Only

☐ CR/NC or Letter Grade

To: ☐ Credit/No Credit Only

☐ Letter Grade Only

☐ CR/NC or Letter Grade

☐ Add course to GE Section []

☐ Remove course from GE Section []

- ☐ Change course from GE section [] to GE section []
- ☐ Change course to a Community Service Learning course (CS)
- ☐ Allow multiple enrollments within a semester.
- ☐ Change number of times this course may be taken:
May be taken for credit for a total of [] times, or for a maximum of [] units
- ☐ Multiple enrollments are allowed within a semester
- ☐ Crosslist this course with []
- ☐ Other: []

5. Justification and Clarification of Request *(Attach)*

6. Estimated Impact on Resources within the Department, for other Departments and the University.*(Attach)*

(See Resource List)

7. Impact on other Departments' programs *(Attach)*

8. Indicate which of the Program's Measurable Student Learning Outcomes are addressed in this course. *(Attach)*

(see Course Alignment Matrix and the Course Objectives Chart)

9. If this is a General Education course, indicate how the General Education Measurable Student Learning Outcomes (from the appropriate section) are addressed in this course. *(Attach)*

10. Methods of Assessment for Measurable Student Learning Outcomes *(Attach)*

A. Assessment tools

B. Describe the procedure dept/program will use to ensure the faculty teaching the course will be involved in the assessment process (refer to the university's policy on assessment.)

11. Record of Consultation: *(Normally all consultation should be with a department chair or program coordinator.) If more space is needed attach statement and supporting memoranda.*

Date:	Dept/College:	Department Chair/Program Coordinator	Concur (Y/N)
[2/6/2015]	[MSEM/CECS]	[K. Chang]	[Y]
[2/6/2015]	[ME/CECS]	[H. Johari]	[Y]
[2/6/2015]	[ECE/CECS]	[A. Amini]	[Y]
[2/6/2015]	[CECM/CECS]	[N. Dermendjian]	[Y]
[2/6/2015]	[CS/CECS]	[R. Covington]	[Y]
[]	[]	[]	[]

Consultation with the Oviatt Library is **recommended** for course modifications to ensure the availability of appropriate resources to support proposed course curriculum.

Collection Development Coordinator

Date

Please send an email to: collection.development@csun.edu

[]

12. Approvals:

Department Chair/Program Coordinator:	Kang Chang	Date:	[2/6/2015]
College (Dean or Associate Dean):	Robert Ryan	Date:	[5/4/2015]
Educational Policies Committee:		Date:	[]
Graduate Studies Committee:		Date:	[]
Provost:		Date:	[]

5. Justification and Clarification of Request

MSE 623 is currently limited to classified graduate students. Since the course was originally introduced, the course has gradually evolved to include a greater focus on application rather than theory, based on student interest and course assessment. This evolution has increased the potential audience for the course. Changing the course to 500-level will broaden participation to undergraduates and unclassified graduate students. Further, it will complement ME 531, a graduate-only composite materials course offered by the mechanical engineering department, that covers the design and analysis of structures composed of composite materials, as well as ME 436/L, a new undergraduate lecture/lab course covering an introduction to design with composite materials.

Existing Course Description

MSE 623. Composite Materials (3)

Prerequisite: Instructor consent. Introduction to the structural and materials properties of composites. Static and dynamic characteristics. Stress analysis. Environmental and manufacturing effects on composites. Methods of testing composites.

Proposed Course Description

MSE 523. Composite Materials (3)

Prerequisite: Undergraduate course in strength of materials, and instructor consent. Introduction to composite materials. Analysis of composite properties (structural, thermal, electrical, etc.), micro- and macro-mechanics; models for describing composite properties. Composite manufacturing methods. Environmental and manufacturing effects on composites. Methods of composite testing.

6. Estimated Impact on Resources within the Department, for other Departments and the University.

Because MSE 623 is currently offered by the MSEM department, no impact on teaching personnel is anticipated. The course will utilize existing classroom and laboratory resources.

7. Impact on other Departments' programs

The proposed offering will complement ME 531, a course currently offered by the mechanical engineering department, as well as a new course, ME 436/L. It is expected that enrollment will increase in all three of these courses with time, given the growing importance of composite materials in mechanical design applications.

8. Indicate which of the Program's Measurable Student Learning Outcomes are addressed in this course.

This course is intended to be taken by both undergraduate and graduate students, so outcomes for both programs are listed (see below). The undergraduate outcomes are a subset of the standard ABET requirements, and the graduate outcomes for the Engineering Materials Master's Degree Program are shown in the right column.

Undergraduate Outcomes	Graduate Outcomes
An ability to apply knowledge of mathematics, science and engineering. (ABET Outcome A)	Enhance student knowledge of fundamental materials engineering principles
A recognition of the need for professional currency, and an ability to engage in perpetual learning (ABET Outcome I)	Expand knowledge of nontraditional materials, such as composites and electronic materials (perpetual learning)
An ability to use the contemporary techniques, skills and tools necessary for effective [manufacturing systems] engineering practice (ABET Outcome K)	Enable student intellectual growth in discipline-related areas and meet the needs of the regional industrial community for qualified materials engineering expertise.