

TO: The Engineering Faculty
FROM: The Faculty of the School of Materials Engineering
RE: Revisions in Curriculum for B.S. in Materials Science and Engineering

The Faculty of the School of Materials Engineering has approved the following curriculum changes. These changes are now submitted to the Engineering Faculty with a recommendation for approval.

I. Change in Required Physics Course (Fourth Semester).

From: **PHYS 251** (Heat, Electricity, and Optics with Lab) (5 cr.)

To: **PHYS 241** (Electricity and Optics) (3 cr.)
PHYS 252 (Heat, Electricity, and Optics Laboratory) (1 cr.)

Reason: The Physics Department will no longer offer PHYS 251. Physics 241 and 252 offer the closest equivalent content.

II. Change in Credit Hours in Required Materials Engineering Course (Third Semester).

From: **MSE 235 Materials Properties Laboratory** Sem. 1. Class 1, lab. 3, cr. 2

To: **MSE 235 Materials Properties Laboratory** Sem. 1. Class 2, lab. 3, cr. 3

Reason: The increase in credit hours for MSE 235 is supported by EFD 104-00.

Due to the decrease in Physics credit hours (item I above) , there is no change in the credit hours required for graduation.

... continued on reverse ...

APPROVED FOR THE FACULTY
OF THE SCHOOLS OF ENGINEERING
BY THE COMMITTEE ON
FACULTY RELATIONS

CFR Minutes #948

Date 4/25/01

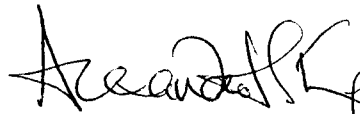
Chairman CFR E. D. Sutton

III. Change in Technical Elective Requirement.

From: Eighteen credit hours of technical electives must be selected from lists of courses approved by the faculty of the School of Materials Engineering. At least 12 of the 18 hours are to be selected from an approved list of "materials specific" courses. These 12 hours must include two courses from each of two chosen materials areas and follow other requirements of the School. The remaining 6 hours are chosen from an approved list of courses which includes other academic areas.

To: Eighteen credit hours of technical electives must be selected from lists of courses approved by the faculty of the School of Materials Engineering. At least 12 of the 18 hours are to be selected from an approved list of Materials courses. Up to 6 hours can be chosen from a separate list of courses which includes other Support Areas.

Reason: The less restrictive requirement improves the flexibility of the curriculum.



Alex H. King , Head

Plan of Study for Materials Science and Engineering (B.S.MSE)

Present

Credit Hours Required for Graduation: 127

Proposed

Credit Hours Required for Graduation: 127

Freshman Year

(32 credit hours)

Sophomore Year*

Third Semester

(3) MSE 230 (Structure and Properties of Materials)	(3) MSE 230 (Structure and Properties of Materials)
(2) MSE 235 (Materials Properties Laboratory)	(3) MSE 235 (Materials Properties Laboratory)
(3) ME 270 (Basic Mechanics I)	(3) ME 270 (Basic Mechanics I)
(4) MA 261 (Multivariate Calculus)	(4) MA 261 (Multivariate Calculus)
(3) CHM 257 (Organic Chemistry)	(3) CHM 257 (Organic Chemistry)
<u>(0) MSE 390 (Seminar)</u>	<u>(0) MSE 390 (Seminar)</u>
(15)	(16)

Fourth Semester

(3) MSE 240 (Processing and Properties of Materials)	(3) MSE 240 (Processing and Properties of Materials)
(5) PHYS 251 (Heat, Elect & Optics w/Lab)	(3) PHYS 241 (Electrical and Optics)
(3) MA 265 (Linear Algebra)	(1) PHYS 252 (Heat, Elec. & Optics Lab)
(3) MA 266 (Ordinary Differential Equations)	(3) MA 265 (Linear Algebra)
(3) General Education Elective §	(3) MA 266 (Ordinary Differential Equations)
<u>(0) MSE 390 (Seminar)</u>	(3) General Education Elective §
(17)	<u>(0) MSE 390 (Seminar)</u>
	(16)

Junior Year

Fifth Semester

(3) CHM 373 (Physical Chemistry)	(3) CHM 373 (Physical Chemistry)
(3) CE 273 (Mechanics of Materials)	(3) CE 273 (Mechanics of Materials)
(3) MSE 335 (Materials Characterization Laboratory)	(3) MSE 335 (Materials Characterization Laboratory)
(3) MSE 340 (Transport Phenomena)	(3) MSE 340 (Transport Phenomena)
(3) MSE 370 (Electrical, Optical and Magnetic Properties of Materials)	(3) MSE 370 (Electrical, Optical and Magnetic Properties of Materials)
(0) MSE 390 (Seminar)	(0) MSE 390 (Seminar)
<u>(3) General Education Elective §</u>	<u>(3) General Education Elective §</u>
(18)	(18)

Sixth Semester

(3) MSE 350 (Thermodynamics of Materials)	(3) MSE 350 (Thermodynamics of Materials)
(3) MSE 367 (Materials Processing Laboratory)	(3) MSE 367 (Materials Processing Laboratory)
(3) MSE 382 (Mechanical Response of Materials)	(3) MSE 382 (Mechanical Response of Materials)
(3) Technical Elective #	(3) Technical Elective #
(3) General Education Elective §	(3) General Education Elective §
<u>(0) MSE 390 (Seminar)</u>	<u>(0) MSE 390 (Seminar)</u>
(15)	(15)

Present

Proposed

Senior Year

Seventh Semester

(3) MSE 430 (Materials Processing and Design I)	(3) MSE 430 (Materials Processing and Design I)
(3) General Education Elective §	(3) General Education Elective §
(9) Technical Electives #	(9) Technical Electives #
<u>(0) MSE 390 (Seminar)</u>	<u>(0) MSE 390 (Seminar)</u>
(15)	(15)

Eighth Semester

(3) MSE 440 (Materials Processing and Design II)	(3) MSE 440 (Materials Processing and Design II)
(6) General Education Electives §	(6) General Education Electives §
(6) Technical Electives #	(6) Technical Electives #
<u>(0) MSE 390 (Seminar)</u>	<u>(0) MSE 390 (Seminar)</u>
(15)	(15)

Changes in Footnotes:

Present:

- *Students entering the School of Materials Engineering should have completed the sequence of CHM 115 and 116 or the sequence of CHM 123 and 124.
 - §Eighteen credit hours of general education electives are chosen in accordance with the general education requirements of the Schools of Engineering.
 - #Eighteen credit hours of technical electives must be selected from lists of courses approved by the faculty of the School of Materials Engineering. At least 12 of the 18 hours are to be selected from an approved list of "materials specific" courses. These 12 hours must include two courses from each of two chosen materials areas and follow other requirements of the School. The remaining 6 hours are chosen from an approved list of courses which includes other academic areas.
- Note: The pass/not-pass option may be applied only to general education elective courses.

Proposed:

- *Students entering the School of Materials Engineering should have completed the sequence of CHM 115 and 116 or the sequence of CHM 123 and 124.
 - §Eighteen credit hours of general education electives are chosen in accordance with the general education requirements of the Schools of Engineering.
 - #**Eighteen credit hours of technical electives must be selected from lists of courses approved by the faculty of the School of Materials Engineering. At least 12 of the 18 hours are to be selected from an approved list of Materials courses. Up to 6 hours can be chosen from a separate list of courses, which includes other Support Areas.**
- Note: The pass/not-pass option may be applied only to general education elective courses.

Credit Hours Required for Graduation: 127

	Credit Hours
Mathematics and Physical Sciences	
Calculus: MA 165, 166, 261, 265, 266	18
Chemistry: CHM 115, 116, 257, 373	14
Physics: PHYS 152, 241, 252	8
Communication and General Education:	
English Composition and Speech: ENGL 101, COM 114	6
General Education: Humanities and Social Science elective courses selected with MSE faculty guidance in accordance with the General Education requirements of the Schools of Engineering	18
Seminars:	
ENGR 100, MSE 190 (or other FrE elective), MSE 390	2
Core Engineering Courses:	
Computing: ENGR 106, CS 152	4
Basic Mechanics: ME 270, CE 273	6
MSE Core: 230, 235, 240, 335, 340, 350, 367, 370, 382, 430, 440	33
Integrated MSE courses, including yearlong, industry-sponsored senior design projects, on the structure, properties, processing, and performance of engineering materials.	
Technical Electives:	
A plan of study is designed with the help of a faculty advisor to meet each individual student's professional goals. At least 12 of the 18 hours are to be selected from an approved list of <i>Materials</i> courses. Up to 6 hours can be chosen from a separate list of courses which includes other <i>Support Areas</i> .	18

