TO: Engineering Curriculum Committee

FROM: The Faculty of the School of Materials Engineering

DATE: January 31, 2018

RE: Written and Communication requirement changes for the MSE Plan of Study.

The faculty of the School of Materials Engineering has approved the following changes to the prerequisites for the MSE plan of study.

This action is now submitted to the Engineering Curriculum Committee with a recommendation for approval.

Semester 1:
From: English Composition or equivalent (3/4 credit hours)
To: Written Communication Foundational Outcome course (3/4 credit hours)

Semester 2:
From: COM 11400 – Fundamentals of Speech (3 credit hours)
To: Oral Communication Foundational Outcome course (3 credit hours)

Reason: Provides students with greater choice of courses to meet the University requirements and to accommodate future alternatives in the first year engineering program.
# Plan of Study for the B.S. MSE Degree

## Freshman Year

### First Semester

- (4) MA 16500 (Analytic Geometry And Calculus I)
- (4) CHM 11500 (General Chemistry I) (or CHM 13600 Honors)
- (4/3) ENGL 10600 or equivalent (English Composition)
- (2) ENGR 13100 or 1 (Transforming Ideas to Innovation I) or ENGR 14100 (Honors version)

### Second Semester

- (4) MA 16600 (Analytic Geometry And Calculus II)
- (4) CHM 11600 (General Chemistry II) (or CHM 13600)
- (4) PHYS 17200 (Modern Mechanics)
- (3) COM 11400 (Fundamentals of Speech)
- (2) ENGR 13200 (Transforming Ideas to Innovation II) or ENGR 14200 (Honors version)

## Sophomore Year

### Third Semester

- (3) MSE 23000 (Structure and Properties of Materials) Pre-CHM 11500, MA 16500
- (3) MSE 23500 (Materials Properties Laboratory) Pre-CHM 11500, MA 16500, Co-MSE 23000

### Fourth Semester

- (3) MSE 25000 (Physical Properties in Eng. Systems) Pre-PHYS 17200, Co-MSE 23000, Co-MA 26500 (or MA 26200)
- (3) MSE 26000 (Thermodynamics of Materials) Pre-MA 26100, Co-MSE 23000 Co-CHM 11500 (or CHM 13600)
- (3) MSE 27000 (Atomistic Materials Science) Pre-MA 26100, Co-MA 26500 (or MA 26200), Co-MSE 23000

## Junior Year

### Fifth Semester

- (3) MSE 33500 (Materials Characterization Laboratory) Pre-MSE 23500
- (3) MSE 34000 (Transport Phenomena) Pre-MA 26600 (or MA 26200)
- (3) MSE 37000 (Elec,Opt, and Mag. Props. of Materials) Pre-MSE 23000, MSE 27000, PHYS 24100 (or PHYS 27200)
- (3) General Education Elective
- (0) MSE 39000 (Seminar)

### Sixth Semester

- (3) MSE 33000 (Proc. and Props. of Matls.) Pre-MSE 26000
- (3) MSE 36700 (Materials Processing Laboratory) Pre-MSE 26000
- (3) MSE 38200 (Mechanical Response of Materials) Pre-MSE 25000, MA 26500 (or MA 26200)
- (3) MSE 420 (Structure & Props. of Organic Matls.)
- (3) Technical Elective
- (0) MSE 39000 (Seminar)

## Senior Year

### Seventh Semester

- (3) MSE 43000 (Materials Processing and Design I) Pre-MSE 33500 and 36700
- (3) MSE 44500 (Materials Engineering Systems Analysis) Pre-MSE 33000, 34000, Co-MSE 43000
- (6) Technical Electives
- (3) General Education Elective

### Eighth Semester

- (3) MSE 44000 (Materials Processing and Design II) Pre-MSE 33500, 34000, 37000, 43000
- (9) Technical Electives
- (6) General Education Electives
- (0) MSE 39000 (Seminar)
### Proposed Freshman Year

**First Semester**
- MA 16500 (Analytic Geometry And Calculus I) (4 credit hours)
- CHM 11500 (General Chemistry I) (or CHM 13600 Honors) (4 credit hours)

**Second Semester**
- MA 16600 (Analytic Geometry And Calculus I I) (4 credit hours)
- CHM 11600 (General Chemistry I) (or CHM 13600) (4 credit hours)

### Sophomore Year

**Third Semester**
- MSE 23000 (Structure and Properties of Materials) (3 credit hours)
- MSE 23500 (Materials Properties Laboratory) (3 credit hours)
- MA 26100 (Multivariate Calculus) (3 credit hours)
- PHYS 24100 (Electricity and Optics) (3 credit hours)

**Fourth Semester**
- MSE 25000 (Physical Properties in Eng. Systems) (3 credit hours)
- MSE 26000 (Thermodynamics of Materials) (3 credit hours)
- MSE 27000 (Atomistic Materials Science) (3 credit hours)

### Junior Year

**Fifth Semester**
- MSE 33500 (Materials Characterization Laboratory) (3 credit hours)
- MSE 34000 (Transport Phenomena) (3 credit hours)
- MSE 37000 (Elec,Opt, and Mag. Props. of Materials) (3 credit hours)
- General Education Elective (3 credit hours)

**Sixth Semester**
- MSE 33000 (Proc. and Props. of Mats.) (3 credit hours)
- MSE 36700 (Materials Processing Laboratory) (3 credit hours)
- MSE 38200 (Mechanical Response of Materials) (3 credit hours)

### Senior Year

**Seventh Semester**
- MSE 43000 (Materials Processing and Design I) (3 credit hours)
- MSE 44500 (Materials Engineering Systems Analysis) (3 credit hours)
- General Education Elective (3 credit hours)

**Eighth Semester**
- MSE 44000 (Materials Processing and Design II) (3 credit hours)
- Technical Electives (9 credit hours)
- General Education Electives (6 credit hours)

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**Writing and Speaking Outcomes**
- Written Communication: Foundational Outcome course (4 credit hours)
- Oral Communication: Foundational Outcome course (4 credit hours)
- General Education Elective (15 credit hours)
- Technical Electives (9 credit hours)