

## Recommended course sequence 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) Written Communication Foundational Outcome course
- (2) ENGR 13100 or 1 (Transforming Ideas to Innovation I)  
or ENGR 14100 (Honors version)

(14 or 13)

#### Second Semester

- (4) MA 16600 (Analytic Geometry And Calculus II)
- (4) CHM 11600 (General Chemistry II) (or CHM 13600)
- (4) PHYS 17200 (Modern Mechanics)
- (4/3) Oral Communication Foundational Outcome course
- (2) ENGR 13200 (Transforming Ideas to Innovation II)  
or ENGR 14200 (Honors version)

(17)

### Sophomore Year

#### Third Semester

- (3) MSE 23000 (Structure and Properties of Materials)  
Prerequisites: CHM 11500, MA 16500
- (3) MSE 2<sup>nd</sup> year course\*
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- (4) MA 26100 (Multivariate Calculus)
- (3) MA 26500 (Linear Algebra)

- (0) MSE 39000 (Seminar)

(16)

#### \*MSE 2<sup>nd</sup> year courses:

- MSE 23500 Materials Properties Laboratory  
Prerequisites: CHM 11500, MA 16500
- MSE 25000 Physical Properties in Engineering Systems  
Prerequisites: PHYS 17200; Corequisites: MSE 23000, MA 26500 (or MA 26200)
- MSE 26000 Thermodynamics of Materials  
Prerequisites: MA 26100, Corequisites: MSE 23000, CHM 11600 (or CHM 13600)
- MSE 27000 Atomistic Materials Science  
Corequisites: MA 26100, MA 26500 (or MA 26200), MSE 23000

#### Fourth Semester

- (3) MSE 2<sup>nd</sup> year course\*
- (3) MSE 2<sup>nd</sup> year course\*
- (3) PHYS 24100 (Electricity and Optics)
- (3) MA 26600 (Ordinary Differential Equations)
- (1) PHYS 25200 (Elec. And Optics Lab)
- (3) General Education Elective
- (0) MSE 39000 (Seminar)

(16)

### Junior Year

#### Fifth Semester

- (3) MSE 33500 (Materials Characterization Laboratory)  
Prerequisites: MSE 23500
- (3) MSE 34000 (Transport Phenomena)  
Pre-MA 26600 (or MA 26200), MSE 26000
- (3) MSE 37000 (Elec, Opt, and Mag. Props. of Materials)  
Prerequisites: MSE 23000, MSE 27000, PHYS 24100 (or PHYS 27200)

- (3) General Education Elective
- (3) General Education Elective
- (0) MSE 39000 (Seminar)

(15)

#### Sixth Semester

- (3) MSE 33000 (Proc. and Props. of Matls.)  
Prerequisites: MSE 23000
- (3) MSE 36700 (Materials Processing Laboratory)  
Pre-MSE 26000
- (3) MSE 38200 (Mechanical Response of Materials)  
Prerequisites: MSE 25000, MA 26500 (or MA 26200)

- (3) MSE 420 (Structure & Props. of Organic Matls.)
- (3) Technical Elective
- (0) MSE 39000 (Seminar)

(15)

*Senior Year*

**Seventh Semester**

- (3) MSE 43000 (Materials Processing and Design I)  
Prerequisites *MSE 33500 or 36700*
- (3) MSE 44500 (Materials Engineering Systems Analysis)  
*Pre-MSE 33000, 34000, Co-MSE 43000*
- (6) Technical Electives
- (3) General Education Elective
- (0) MSE 39000 (Seminar)

**Eighth Semester**

- (3) MSE 44000 (Materials Processing and Design II)  
Prerequisites *MSE, 43000*
- (9) Technical Electives
- (6) General Education Electives
- (0) MSE 39000 (Seminar)
- (18)