### Underpinning Mathematics/Science: (min 40 cr)

**Mathematics (16 cr)**
- Math 221 Calculus and Analytical Geometry
- Math 222 Calculus and Analytical Geometry
- Math 234 Calculus-Functions of Several Variables
- Math 319 Ordinary Differential Equations (DEQs)
  or Math 320 Linear Algebra and DEQs

**Statistics (3 cr)**
- Stat 324 Introductory Applied Statistics for Engineers

**Physics (10 cr)**
- Phys 201 or Phys 207 or Phys 247 General Physics I
  or EMA 201 and EMA 202
- Phys 202 or Phys 208 or Phys 248 General Physics II

**Chemistry (min 8 cr)**
- Chem 109 Advanced General Chemistry
  or Chem 103 & 104 General Chemistry
- Chem 343 Introductory Organic Chemistry
  or Chem 341, also Intro Organic Chemistry

**Science Elective (min 3 cr)**
Select one of:
- Chem 311 Chemistry Across the Periodic Table
- Chem 327 Fundamentals of Analytical Science
- Chem 329 Fundamentals of Analytical Science
- Chem 345 Intermediate Organic Chemistry
- Geol 203 Earth Materials
- Phys 205 Modern Physics for Engineers
- Phys 235 Introduction to Solid State Electronics
- Phys 241 Intro to Modern Physics
- Phys 244 Intro to Modern Physics
- Biology 101 Animal Biology
- Biology 151 Introductory Biology
- Zoology 153

### MSE Disciplinary Core Courses: (40 cr)

- MSE 330 Thermodynamics of Materials
- MSE 331 Transport Phenomena in Materials
- MSE 332 Macroprocessing of Materials
- MSE 333 Microprocessing of Materials
- MSE 351 Mat Sci-Structure Property Relationships
- MSE 352 Materials Science-Transformation of Solids
- MSE 360 Materials Laboratory I
- MSE 361 Materials Laboratory II
- MSE 362 Materials Laboratory III
- MSE 421 Introduction to Polymer Materials
- MSE 441 Deformation of Solids
- MSE 451 Introduction to Ceramic Materials
- MSE 456 Electrical, Optical and Magnetic Properties
- MSE 470 Capstone Project I
- MSE 471 Capstone Project II

### Materials Emphasis Electives: (15 cr)

Select 6 credits of MSE courses numbered 400 or above. These courses constitute the MSE portion of the Emphasis Electives on the curriculum flow chart.

Select 9 additional credits of science and engineering coursework. These can come from MS&E courses numbered 400 or above, other engineering courses numbered 300 or above, science courses numbered 300 or above, or up to 3 credits of MS&E 001 Co-op.

Taken together, the above 15 credits of courses constitute the MSE Emphasis Electives on the curriculum flow chart. MS&E advisor approval of the set of selections is required. Course sets may be broad-based or concentrated in a sub-field of materials science and engineering. See department for example materials emphasis elective course sets.

### Additional College and University Requirements: (23 cr)

**Communications (5 cr)**
- EPD 397 Technical Communication
- EPD 155 or other Comm A course

**Liberal Studies Electives (16 cr)**
- Same as College of Engineering Liberal Studies Elective requirements.

### Credit Minimum for Graduation: 128 cr

The above subject requirements can be met with 123 credits of UW courses. Students must complete 128 credits of course work to earn the Bachelor of Science degree. The 5 elective credits may be earned by choosing elective courses that carry more credits than the requirement’s minimum credit load or by taking any additional courses of the student’s choice.

### Notes:
- Except for the liberal studies requirements, the same course credits may be applied to only degree elective requirement. MS&E follows the College of Engineering policies with regard to application of liberal studies credits across the liberal studies requirements.
- Students who completed Stat 242 prior to entry into the MSE degree program may use it to fulfill the statistics requirement. All other students must take Stat 324. This exception is made because students cannot receive credit for Stat 242 and Stat 324 simultaneously.