

## Materials Science and Engineering Catalog 2024 Sustainable Energy Concentration

Fall 16 hours	<b>Chem 122(3) and 123(1) or 128 (4) (NS) FA, SP, SU</b> Prereq-Math 119; recommended background in Math 131	<b>Math 132 or 141 or 147 (3-4) (QR) FA,SP,SU</b> Math 132 Prereq- Math 131 Math 141 Prereq- ACT Math 28 or SAT Math 660	<b>EF 142 or 151 or 157 (4) (EI) FA, SP</b> EF 142 Prereq- EF 141 with C- or better and Math 131 EF 142 Coreq- Math 132 EF 151 Coreq- 141/147 or higher and EF 105 or COSC 101 or CS 102	<b>EF 105 (1) FA, SP</b> Coreq- EF 151 or 157	<b>English 101 or 131 (3) FA, SP, SU</b> 101 Standard; 131 English as Second Language
Spring 17 hours	<b>MSE 110 or 117 (3) SP</b> Prereq-Chem 122 and 123 or 128	<b>MSE 120 or 127 (3) SP</b>	<b>Math 142 or 148 (4) (QR) FA, SP, SU</b> Prereq- Math 132 or 141 or 147	<b>EF 152 or 158 (4) (NS and EI) FA, SP, SU</b> Prereq-EF 142/151/157 with C or higher Coreq- Math 142 or 148	<b>English 102 or 112 or 298 or 132 (3) FA, SP, SU</b> 102 Prereq 101; 112 Prereq is AP 101 and Test Scores; 298 Prereq University Honors only; 132 Prereq 131 ESL
Fall 15 hours	<b>MSE 201 or 207 (3) FA, SP, SU</b> Prereq- Chemistry 122 and 123 or 128	<b>MSE 220 (3) (OC) FA</b>	<b>Math 241 or 247 (4) FA, SP, SU</b> Prereq- Math 142 or 148	<b>Physics 231 (3) FA, SP, SU</b> Prereq- Phys 135/137 or EF 151/157 or 152/158 Coreq- Math 142 or 148	<b>EF 230 or 237 (2) FA, SP</b> Prereq- EF 105 or CS 102 Coreq- EF 152/158
Spring 17 hours	<b>MSE 210 (3) SP</b> Coreq- MSE 201 or 207	<b>MSE 250 (4) SP</b> Prereq- Math 142/148, EF 230 Coreq-Math 231 or 237 and MSE 201 or 207	<b>Vol Core (3) FA, SP, SU</b> Global Citizenship United States (GCUS)	<b>Math 231 or 237 (3) FA, SP, SU</b> Prereq- Math 142 or 148	<b>MSE 260 (4) SP</b> Prereq- MSE 201/207 and EF 152 /158 Coreq- Chem 132/133/138 or MSE 110/117 and Math 241 /247
Fall 15 hours	<b>MSE 300 (2) FA</b> Prereq- MSE 201/207 with grades of C or better and 210	<b>MSE 301 (3) FA</b> Prereq- Math 142/148 and 231/237; EF 230	<b>MSE 340 or 347 (4) FA</b> Prereq- MSE 201 or 207	<b>MSE 360 or 367 (4) FA</b> Prereq- MSE 201 or 207	<b>Math 200 (2) FA, SP</b> Cannot receive credit if previous C or better in Math 251 or 257 Prereq- Math 142 or 148
Spring 16 hours	<b>MSE 302 (3) SP</b> Prereq- MSE 201 or 207	<b>MSE 304 (WC) (3) SP</b> Prereq- MSE 250, 260, 300, 340/347, 360/367 and ENGL 102, 112, 132, or 298	<b>MSE 350 or 357 (3) SP</b> Prereq- MSE 201 or 207 or Physics 232 or Physics 250	<b>MSE 390 or 397 (4) SP</b> Prereq- MSE 201 or 207	<b>Vol Core (3) FA, SP, SU</b> Arts and Humanities (AH)
Fall 15 hours	<b>MSE 455 (3) FA</b> Prereq- MSE 201 or 207; ENGL 102, 132, 290, 298	<b>MSE 480 (3) FA</b> Prereq- MSE 300 and 340/347 and 360/367; level senior	<b>*Technical Elective (3) FA, SP, SU</b> Petition required in advance	<b>Vol Core (3) FA, SP, SU</b> Global Citizenship International (GCI)	<b>Vol Core (3) FA, SP, SU</b> Expanded Perspectives- choose from AH, AAH, GCUS, GCI, or SS
Spring 15 hours	<b>***MSE 4XX (3) FA, SP, SU</b> see below	<b>**Technical Elective (3) FA, SP, SU</b> Petition required in advance	<b>****MSE 489 (AOC and EI) (3) SP</b> Prereq- MSE 304 with C or better, 390 or 397, and 480; level senior	<b>Vol Core (3) FA, SP, SU</b> Expanded Perspectives- choose from AH, AAH, GCUS, GCI, or SS	<b>Vol Core (3) FA, SP, SU</b> Social Science (SS)

\***Technical Elective Term 7** - Choose from EF 305; MSE course not already required in major, or one course from Technical Track 2: Energy and Climate of the Engineering for Sustainability Minor.

\*\***Technical electives Term 8**: BCMB 230 ; BIOL 150 or 158, BIOL 159, BIOL 160 or 168 ; BME 409 ; CHEM 260, CHEM 360; CBE 475 ; ECE 301; EF 333; ENGL 360; GEOL 310; MATH 475; MSE 457, MSE 483, MSE 484, MSE 485, MSE 486;  
any MSE course not already required ; PHYS 232; other 300 or 400 level science or engineering courses as approved by academic advisor and department head.

\*\*\***MSE 4XX Electives**- Materials Science and Engineering electives: 404, 405, 408, 410 ,415, 421 , 425, 432, 443, 450, 451, 460, 466, 474, 475, 494 , 495, 496R.

\*\*\*\***MSE 489**- Senior Design Project is related to sustainable energy.

### MSE Graduation Requirements

Graduation in materials science and engineering requires a minimum grade point average of 2.0 for all departmental courses taken at UT, Knoxville. No more than seven (7) credit hours of MSE courses in which a C- or lower is the highest grade earned may be counted toward graduation. Students are strongly encouraged to meet with their advisor every semester.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.

**Volunteer Core courses highlighted in light orange.**