

## Degree Plan in Materials Science and Engineering

### FRESHMAN YEAR (Common Engineering First Year)

<i>Fall</i>	<i>sch</i>	<i>Pre/Co-reqs</i>	<i>Spring</i>	<i>sch</i>	<i>Pre/Co-reqs</i>
<b>MATH 151</b> - Eng. Math I	4	MATH 150 <sup>1</sup>	<b>MATH 152</b> - Eng. Math II	4	MATH 151
<b>CHEM 101/111</b> - Fund. Chem I *	4		<b>CHEM 102/112</b> - Fund. Chem II	4	CHEM 101/111, or CHEM 107/117
<b>ENGL 104</b> - Comp & Rhetoric	3		<b>PHYS 218</b> - Newtonian Mechanics	4	MATH 151 or 171
<b>ENGR 111 [H]</b> - Foundations of Eng. I	2	MATH 151 <sup>cr</sup>	<b>ENGR 112 [H]</b> - Foundations of Eng. II	2	MATH 151 or 171; ENGR 111
<b>UCC Elective</b>	3		<b>UCC Elective</b>	3	
	16			17	

### SOPHOMORE YEAR

<i>Fall</i>	<i>sch</i>	<i>Pre/Co-reqs</i>	<i>Spring</i>	<i>sch</i>	<i>Pre/Co-reqs</i>
<b>PHYS 208</b> - Electricity, Magnetism, and Light	4	PHYS 218; MATH 152 or 172	<b>UCC Comm. Elective</b> (COMM 205 or ENGL 210)	3	
<b>UCC Elective</b>	3		<b>MSEN 210 [H]</b> - Thermodynamics of Mater.	3	MSEN 201 <sup>cr</sup> , MATH 152 <sup>cr</sup>
<b>MATH 251</b> - Eng Math III	3	MATH 152	<b>MSEN 250 [H]</b> - Soft Matter	3	MSEN 201 <sup>cr</sup> , CHEM 102
<b>MSEN 201</b> - Fundamentals of Materials	3	PHYS 218; CHEM 101 or CHEM 107	<b>MSEN 301</b> - Unified Mat. Lab 1 <sup>w</sup>	3	MSEN 210 <sup>cr</sup> , MSEN 260 <sup>cr</sup>
<b>MSEN 205 [H]</b> - Materials in Society	2	MSEN 201 <sup>cr</sup>	<b>MSEN 260</b> - Structure of Materials	3	MSEN 201 <sup>cr</sup>
	15		<b>MSEN 281</b> - Materials Seminar	1	MSEN 201 <sup>cr</sup>
				16	

### JUNIOR YEAR

<i>Fall</i>	<i>sch</i>	<i>Pre/Co-reqs</i>	<i>Spring</i>	<i>sch</i>	<i>Pre/Co-reqs</i>
<b>MATH 308</b> - Differential Equations	3	MATH 251	<b>MSEN 330 [H]</b> - Num Mthds for Mater Sci Eng	3	MSEN 305, MSEN 320, MATH 308
<b>MSEN 305</b> - Kinetics of Materials	3	MSEN 210	<b>MSEN 400</b> - Design Analys. Mater Exp	3	MSEN 302
<b>MSEN 302</b> - Unified Mat. Lab 2 <sup>w</sup>	3	MSEN 320 <sup>cr</sup> , MSEN 301	<b>MSEN Tech Elective 1</b>	3	
<b>MSEN 320 [H]</b> - Deform. and Failure Mech. in Eng. Materials	3	MSEN 260	<b>MSEN 360</b> - Materials Characterization	3	MSEN 250, MSEN 260
<b>MSEN 380</b> - Communicating Mat Sci Eng	1	COMM 205, or ENGL 210	<b>MSEN 325 [H]</b> - Functional Materials Prop	3	MSEN 260
<b>MSEN 399</b> - High Impact Experience for Materials Engineers	0	MSEN 205, MSEN 281	<b>UCC Elective</b>	3	
<b>UCC Elective</b>	3				
	16			18	

### SENIOR YEAR

<i>Fall</i>	<i>sch</i>	<i>Pre/Co-reqs</i>	<i>Spring</i>	<i>sch</i>	<i>Pre/Co-reqs</i>
<b>ENGR 482</b> - Ethics & Eng <sup>w</sup>	3		<b>MSEN 402</b> - Materials Research Design II	3	MSEN 401
<b>MSEN 401</b> - Materials Research Design I	3	MSEN 205, MSEN 281, MSEN 400	<b>MSEN Tech Elective 3</b>	3	
<b>MSEN 410 [H]</b> - Materials Processing	3	MSEN 250, MSEN 305, MSEN 320	<b>Specialty Elective 2</b>	3	
<b>MSEN Tech Elective 2</b>	3		<b>Specialty Elective 3</b>	3	
<b>Specialty Elective 1</b>	3		<b>UCC Elective</b>	3	
	15			15	

\* CHEM 107/CHEM 117 is accepted in place of CHEM 101/111.

<sup>cr</sup> co-rec<sup>1</sup> or placement exam<sup>w</sup> writing intensive class<sup>c</sup> communications intensive class

[H] Honors Designation

<b>Engineering First Year</b>	31 sch
<b>UCC Electives</b>	21 sch
<b>MSEN Core</b>	58 sch
<b>MSEN Tech Electives</b>	9 sch
<b>Specialty Electives</b>	9 sch
<b>TOTAL</b>	128 sch

