Binary Program Course Requirements
Case School of Engineering

Materials Science and Engineering

(DRAFT)

Courses equivalent to the following need to be taken prior to admission to Case School of Engineering for all degree programs

Subject Code	Course Number	Course Title	Semester Credit Hours
CHEM	105	Principles of Chemistry I	3
CHEM	106	Principles of Chemistry II	3
CHEM	113	Principles of Chemistry Laboratory	2
ENGR	131	Elementary Computer Programming	3
MATH	121	Calculus for Science & Engineering I	4
MATH	122	Calculus for Science & Engineering II	4
MATH	223	Calculus for Science & Engineering III	3
MATH	224	Elementary Differential Equations	3
PHYS	121	General Physics I	4
PHYS	122	General Physics II	4
		Humanities and Social Sciences	22
		(including college level writing proficiency)	0
		Physical Education (2 semesters)	0
			55

Binary Program Course Requirements
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Materials Science and Engineering

Fall Year 1

Subject Code	Course Number	Course Title	Hours per Week		Semester Credit Hours
			Class	Lab	
EMSE	102	Materials Science Seminar	1	0	1
EMSE	201	Intro to Materials Science and Engineering	3	0	3
EMSE	310	Applications of Diffraction Principles	0	2	1
EMSE	312	Diffractions Principles	3	0	3
EMSE	314	Elect, Magnetic, and Optical Prop. Of Materials	3	0	3
CHEM	301	Intro to Physical Chemistry	3	0	3
			13	2	14

Spring Year 1

Subject Code	Course Number	Course Title	Hours per Week		Semester Credit Hours
			Class	Lab	
EMSE	270	Materials Lab 1	0	3	2
EMSE	202	Phase Diagrams and Phase Transformations	3	0	3
ENGL	398N	Professional Communication	3	0	3
PHYS	250	Numerical Methods	3	0	3
ENGR	200	Statics and Strength of Materials	3	0	3
ENGR	210	Intro to Circuits and Instrumentation	3	2	4
			15	5	18

Fall Year 2

Subject Code	Course Number	Course Title	Hours per Week		Semester Credit Hours
			Class	Lab	
EMSE	280	Materials Lab II	0	3	2
EMSE	203	Applied Thermodynamics	3	0	3
EMSE	301	Fundamentals of Materials Processing	3	0	3
EMSE	302	Fundamentals of Materials Processing Lab	0	3	1
EMSE	398	Senior Project in Materials I	0	2	1
ENGR	225	Thermo, Fluid and Heat and Mass Transfer	4	0	4
		Technical Elective	3	0	3
			13	8	17

Spring Year 2

Subject Code	Course Number	Course Title	Hours per Week		Semester Credit Hours
			Class	Lab	
EMSE	290	Materials Lab III	0	3	2
EMSE	303	Mechanical Behavior of Materials	3	0	3
EMSE	313	Engineering Applications of Materials	3	0	3
EMSE	399	Senior Project in Materials II	0	4	2
		Technical Elective	3	0	3
		Technical Elective	3	0	3
			12	7	16