

Sample Schedule for MSE/BME Additional Major
Updated 11/1/2023

MSE		MSE + BME	
First year	Units	First year	Units
Fall		Fall	
21-120 Differential & Integral Calculus	10	21-120 Differential & Integral Calculus	10
27-100 Engineering Materials of the Future	12	27-100 Engineering Materials of the Future or 42-101 Intro to BME	12
99-101 Computing@Carnegie Mellon	3	99-101 Computing@Carnegie Mellon	3
xx-xxx General Education Course	9	03-121 Modern Biology	9
33-141 Physics for Engineering Students I	12	33-141 Physics for Engineering Students I	12
Total:	46	Total:	46
Spring		Spring	
21-122 Integration, Differential Equations and Approximation	10	21-122 Integration, Differential Equations and Approximation	10
xx-xxx Second Introductory Engineering Course	12	27-100 Engineering Materials of the Future or 42-101 Intro to BME	12
33-142 Physics II for Engineering Students	12	33-142 Physics II for Engineering Students	12
76-101 Interpretation and Argument	9	76-101 Interpretation and Argument	9
Total:	43	Total:	43
Second year		Second year	
Fall		Fall	
27-201 Structure of Materials	9	27-201 Structure of Materials	9
27-210 Materials Engineering Essentials	6	27-210 Materials Engineering Essentials	6
27-215 Thermodynamics of Materials	12	27-215 Thermodynamics of Materials	12
09-105 Modern Chemistry I	10	09-105 Modern Chemistry I	10
21-254 Linear Algebra and Vector Calculus for Engineers	11	21-254 Linear Algebra and Vector Calculus for Engineers	11
15-110 Principles of Computing	10-12	42-202 Physiology or 42-203 BME Laboratory	9
39-210 Experiential Learning I	0	39-210 Experiential Learning I	0
Total:	58-60	Total:	57
Spring		Spring	
27-202 Defects of Materials	9	27-202 Defects of Materials	9
27-216 Transport in Materials	9	27-216 Transport in Materials	9
27-217 Phase Relations and Diagrams	12	27-217 Phase Relations and Diagrams	12
21-260 Differential Equations	9	21-260 Differential Equations	9
39-220 Experiential Learning II	0	39-220 Experiential Learning II	0
xx-xxx General Education Course	9	42-202 Physiology or 42-203 BME Laboratory	9
Total:	48	42-201 Professional Issues in BME	3
		Total:	51
Third year		Third year	
Fall		Fall	
27-301 Microstructure and Properties I	9	27-301 Microstructure and Properties I	9
27-xxx MSE Restricted Elective (1)	9	27-xxx MSE Restricted Elective (1)	9
xx-xxx Free Elective (1)	9	15-110 Principles of Computing	10-12
33-225 Quantum Physics and Structure of Matter	9	42-302 BME Systems Modeling and Analysis or 42-xxx BME Track Elective*	9
xx-xxx General Education Course	9	xx-xxx General Education Course	9
39-310 Experiential Learning III	0	xx-xxx General Education Course	9
Total:	45	39-310 Experiential Learning III	0
		Total:	55-57
Spring		Spring	
27-367 Selection and Performance of Materials	6	27-367 Selection and Performance of Materials	6
27-305 Introduction to Materials Characterization	6	27-305 Introduction to Materials Characterization	6
xx-xxx General Education Course	9	xx-xxx General Education Course	9
27-xxx MSE Restricted Elective (2)	9	27-xxx MSE Restricted Elective (2)	9
27-xxx MSE Restricted Elective (3)	9	27-xxx MSE Restricted Elective (3)	9
xx-xxx Free Elective (2)	9	42-302 BME Systems Modeling and Analysis or 42-xxx BME Track Elective*	9
36-220 Engineering Statistics and Quality Control	9	36-220 Engineering Statistics and Quality Control	9
Total:	57	Total:	57
Forth year		Forth year	
Fall		Fall	
27-401 MSE Capstone Course I	6	27-401 MSE Capstone Course I	6
27-xxx MSE Restricted Elective (4)	9	42-xxx BME Track Elective*	9
xx-xxx Free Elective (3)	9	42-401 Foundations of BME Design	6
xx-xxx General Education Course	9	xx-xxx General Education Course	9
xx-xxx General Education Course	9	xx-xxx General Education Course	9
Total:	42	xx-xxx General Education Course	9
		Total:	48
Spring		Spring	
27-402 MSE Capstone Course II	6	27-402 MSE Capstone Course II	6
27-xxx MSE Approved Technical Elective	9	42-402 BME Design	9
xx-xxx Free Elective (4)	9	42-xxx BME Track Elective*	9
xx-xxx Free Elective (5)	9	xx-xxx General Education Course	9
xx-xxx General Education Course	9	Total:	33
Total:	42		

Minimum no. of units to graduate: 381 (MSE), 390 (BME/MSE)

*One BME Track elective must be cross-listed as an MSE course in order to fulfill the MSE restricted elective requirement.
BME/MSE students could take 27-520, 27-570, and 27-709 to satisfy both their MSE and BME Track electives.

Note: This sample schedule serves as a starting point to help students plan their class schedules. Students are advised and strongly encouraged to discuss their plans with the academic advisors.