Materials Science & Engineering Graduation Requirements

University of Washington
https://mse.washington.edu

Requirement Sheet Key

◆ = Upper-Division Admission Requirements

Mathematics (24 Credits)

◆MATH 124 (5cr) - Calculus I
◆MATH 125 (5cr) - Calculus II
◆MATH 126 (5cr) - Calculus III
◆MATH 307 (3cr) - Differential Equations
MATH 308 (3cr) - Matrix Algebra
One course from the following:
IND E 315 (3cr) - Probability & Statistics for Engrs.
MATH 309 (3cr) - Linear Analysis
MATH/STAT 390 (4cr) - Stat. Methods in Engr. & Science
MATH 324 (3cr) - Adv. Multivariable Calculus

Natural Sciences (31 Credits)

◆CHEM 142 (5cr) - General Chem I with Lab
◆CHEM 152 (5cr) - General Chem II with Lab
◆PHYS 121 (5cr) - Mechanics with Lab
◆PHYS 122 (5cr) - Electro/Oscillatory with Lab
PHYS 123 (5cr) - Waves with Lab
Two courses from the following:
BIOL 180 (5cr), 200 (5cr), 220 (5cr);
CHEM 162/163/165 (5cr), 223 (4cr), 224 (4cr), 237 (4cr), 238 (4cr), 239 (4cr), 335 (4cr), 336 (4cr), 337 (4cr);
PHYS 224 (3cr), 225 (3cr), 226 (3cr), 227 (4cr), 228 (4cr)

Written & Oral Communications (8 Credits)

◆English Comp (5cr) - English Composition
ENGR 231 (3cr) - Intro to Technical Writing
Note: Additional required writing credits are built into major core courses.

Visual, Literary & Performing Arts/ Individuals & Society (VLPA/I&S) (24 Credits)

10 credits of VLPA
10 credits of I&S
4 credits of VLPA or I&S
3 credits of Diversity (DIV)
(DIV can overlap with VLPA or I&S)

Engineering Fundamentals (24 Credits)

◆ AMATH 301 (4cr) - Beg. Scientific Computing ***-OR-***
CSE 142 (4cr) - Computer Programming I
◆ MSE 170 (4cr) - Fundamentals of Materials Science
AA 210 (4cr) - Engineering Statics
CEE 220 (4cr) - Mechanics of Materials
Two of the following (8cr):
AA 260 (4cr) **-OR-** CHEM E 325 (4cr), EE 215 (4cr), IND E 250 (4cr), NME 220 (4cr) [NOT eligible as elective for NME students], ME 123 (4cr), ME 230 (4cr)

MSE Core Courses (53 Credits)

MSE 310 (3cr) - Intro to Materials Science & Engineering
MSE 311 (3cr) - Integrated Undergraduate Lab I
MSE 312 (3cr) - Integrated Undergraduate Lab II
MSE 313 (3cr) - Integrated Undergraduate Lab III
MSE 321 (4cr) - Thermodynamics and Phase Equilibrium
MSE 322 (4cr) - Kinematics and Microstructural Evolution
MSE 331 (3cr) - Crystallography and Structure
MSE 333 (3cr) - Materials Characterization
MSE 342 (3cr) - Materials Processing I
MSE 351 (3cr) - Electronic Properties of Materials
MSE 352 (3cr) - Functional Properties of Materials I
MSE 362 (3cr) - Mechanical Behavior of Materials I
MSE 431 (3cr) - Failure Analysis & Durability of Materials
MSE 442 (3cr) - Materials Processing II
MSE 491 (2cr) - Design in Materials Engineering I
MSE 492 (2cr) - Design in Materials Engineering II
MSE 499 (4cr) - Senior Project

MSE Technical Electives (16 Credits)

MSE 400-level electives; Up to 8 credits from other Technical Electives list may be substituted. See website for list of approved technical electives.

NME Option requirements differ. See website for details.

Total Credits Required for Graduation (180 Credits)

Early Admission Requirements

1. Early Admission is an option for Autumn Quarter only.
2. Applicants must be current first-year students.
3. Students must be enrolled at UW Seattle.
4. MATH 124, 125, & 126 or equivalent.
5. 10 credits of physical sciences + accompanying lab:
   CHEM 142, 152 **[preferred]**
   PHYS 121, 122, 123
6. 5 credits of English Composition.
7. 15 of the above credits must have been completed at UW.

Application Deadlines

Early Admission and Upper-Division - July 1st

Last revised August 2017

Materials Science & Engineering Sample Curriculum

University of Washington
https://mse.washington.edu

This is a **sample** four -year plan. It is intended to provide a framework for students to reference as they create their own individual academic plan.

Freshman - Autumn Quarter		Freshman - Winter Quarter		Freshman - Spring Quarter	
◆ **MATH 124 - Calculus I**	5	◆ **MATH 125 - Calculus II**	5	◆ **MATH 126 - Calculus III**	5
◆ **CHEM 142 - Chem & Lab I**	5	◆ **CHEM 152 - Chem & Lab II**	5	◆ **AMATH 301 - Sci. Computing**	4
◆ **English Composition**	5	VLPA/I&S	5	*-OR-* **CSE 142 - Programming I**	
				◆ **MSE 170 - Materials Science**	4
Quarter Total	15	Quarter Total	15	Quarter Total	13

Sophomore - Autumn Quarter		Sophomore - Winter Quarter		Sophomore - Spring Quarter	
◆***MATH 307 - Diff. Equations**	3	◆ **PHYS 122 - Electro & Lab I**	5	PHYS 123 - Waves & Lab I	5
◆**PHYS 121 - Mechanics & Lab I**	5	MATH 308 - Matrix Algebra	3	CEE 220 - Mechanics of Materials	5
VLPA/I&S	4	AA 210 - Engineering Statics	4	Math Elective	3
Engineering Elective	4	Science Elective	3	VLPA/I&S	5
Quarter Total	16	Quarter Total	15	Quarter Total	17

Junior - Autumn Quarter		Junior - Winter Quarter		Junior - Spring Quarter	
MSE 310 - Introduction to MSE	3	*MSE 312 - Integrtd Undrgrd Lab II	3	*MSE 313 - Integrtd Undrgrd Lab III	3
*MSE 311 - Integrated Undrgrd Lab I	3	MSE 322 - Kinetics & Microstructure	4	MSE 333 - Characterization of Mat.	3
MSE 321 - Thermo & Phase Equil.	4	MSE 342 - Materials Processing I	3	MSE 352 - Funct. Prop. of Mat. I	3
MSE 331 - Crystalliztn & Structure	3	MSE 351 - Electron Properties Mat.	3	MSE 362 - Mech. Behavr. of Mat. I	3
ENGR 231 - Technical Writing	3	MSE 399 - UG Research Seminar	1	VLPA/I&S	5
Quarter Total	16	Quarter Total	14	Quarter Total	17

Senior - Autumn Quarter		Senior - Winter Quarter		Senior - Spring Quarter	
MSE 442 - Materials Processing II	3	MSE 431 - Failure Analysis	3	MSE 499 - Senior Project	2
MSE 491 - Materials Design I	2	MSE 492 - Materials Design II	2	MSE Technical Elective	3
MSE 499 - Senior Project	1	MSE 499 - Senior Project	1	MSE Technical Elective	3
MSE Technical Elective	4	MSE Technical Elective	3	Science Elective	3
MSE Technical Elective	3	Engineering Elective	4	VLPA/I&S	5
Quarter Total	13	Quarter Total	13	Quarter Total	16

Bold face courses are required for upper-division admission.
*For early admission students, MSE 311, 312, and 313 will be completed during Sophomore year.
For students completing the NME option, they must enroll in NME 220+221 Spring Sophomore year, NME 321 Spring Junior year, and NME 421 Spring Senior year.
See MSE website for approved technical electives list, NME option major requirements, and any updates.

For more information, contact:
Engineering Advising
Office: 301 Loew Hall Box 352180, Seattle, WA 98195-2180
Phone: (206) 543-1770 Email: engradv@uw.edu
-OR-
Sandra Maddox
Materials Science & Engineering Advising
Office: 302A Roberts Hall Box 352120 Seattle, WA 98195-2120
Phone: (206) 616-6581 Email: askmse@uw.edu

Last revised August 2017