Materials Science and Engineering—Major Requirements for BS Degree with Nanotechnology Emphasis
Effective Fall 2015
University of California, Merced *Anticipated Graduation Date (ex: May 2019)* _____

Full Name: _____ **ID #:** _____ **Email** _____

Requirement/ Course Dept #	Course Title	Grade	Units or # Required	Term/Year Completed	Substitute Approved
UCM Requirements					
-UC Entry Level Writing			n/a		
-American History/Institutions			n/a		
-CORE 001	World at Home I		1 course		
-WRI 010	College Composition		1 course		
School Requirements					
-MATH 021	Calculus I Phys Sciences & Eng		4 units		
-MATH 022	Calculus II Phys Sciences & Eng		4 units		
-MATH 023	Vector Calculus		4 units		
-MATH 024	Linear Algebra and Differential Equations		4 units		
-MATH 032	Probability and Statistics		4 units		
-PHYS 008	Introductory Physics I		4 units		
-PHYS 009	Introductory Physics II		4 units		
-ME 021	Engineering Computing		4 units		
-Science Course	BIO 001, BIO 005, ESS 001, or ESS 005		4 units		
-Arts/Humanities GE			3-4 units		
-Social Science GE			3-4 units		
Major/Core Requirements					
-ENGR 097/197 or SSHA GE			3 units		
-Upper-division Writing Course			4 units		
Engineering Fundamentals					
-ENGR 057	Statics and Dynamics		4 units		
-ENGR 120	Fluid Mechanics		4 units		
-ENGR 130	Thermodynamics		3 units		
-ENGR 151	Strength of Materials		4 units		
-ENGR 155	Engineering Economics		3 units		
MSE Core					
-ENGR 045	Introduction to Materials		4 units		
-PHYS 141	Condensed Matter Physics		4 units		
-MSE 109	Materials Thermodynamics		4 units		
-MSE 111	Materials Kinetics and Processing		4 units		
-MSE 112	Materials Selection and Performance		3 units		
-MSE 113	Materials Characterization		4 units		
-MSE 120	Materials Capstone Design		3 units		
Additional Degree Requirements					
-CHEM 002	General Chemistry I		4 units		
-PHYS 010	Introductory Physics III		4 units		
-ENGR 191	Professional Seminar		1 unit		
Nanotechnology Emphasis	SEE PAGE 2		13-14 units		

Notes/Comments
Advisor Signature/Date:
Student Signature/Date:

This guide in an unofficial document intended to be used for advising/course planning only. This document cannot be used to supersede or waive requirements listed in the UCM Catalog unless approved by your advisor.

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Service Learning/Freshman Seminar/SSHA GE

3 units of ENGR 097/ENGR 197 or one 3-4 unit SSHA GE course.

Term / Course / Team or Title / Units

1.
2.
3.

Nanotechnology Emphasis (13-14 units)

Complete the following three core courses:

Course & Dept #	Course Title	Grade	Units or # Required	Term/Year Completed	Substitute Approved
-MSE 118	Intro to Nanotech and Nanoscience		3 units		
-MSE 126	Nanodevice Fabrication		4 units		
-ENGR 170	Intro to Electron Microscopy		3 unit		

Complete one of the following elective courses:

MSE 114: Polymeric Materials (4 units) _____
MSE 119: Materials Simulations (3 units) _____
MSE 121: Mechanical Behavior of Materials (4 units) _____
MSE 195: Upper Division Undergraduate Research (4 units maximum) _____