

UC MERCED SCHOOL OF ENGINEERING

2009-11 Materials Science and Engineering Program Requirements

Name: _____

ID Number: _____

Class level (circle one): Freshman Sophomore Junior Senior

UC Merced Campus Requirements

☐ **CORE 001 (4)**
The World at Home I

☐ **WRI 010 (4)**
College Reading &
Composition

Engineering Major Preparation

☐ **CHEM 002 (4)**
General Chemistry

☐ **PHYS 009 (4)**
Physics II

☐ **MATH 022 (4)**
Calculus II

☐ **MATH 023 (4)**
Vector Calculus

☐ **MATH 024 (4)**
Linear Algebra &
Diff. Equations

Engineering Fundamentals

☐ **ENGR 057 (4)**
Dynamics

☐ **ENGR 151 (4)**
Strength of Materials

☐ **ENGR 120 (4)**
Fluid Mechanics

☐ **ENGR 130 (3)**
Thermodynamics

☐ **ENGR 155 (3)**
Engineering
Economic Analysis
#At least Junior Standing

General Education Requirements

☐ **MATH 021 (4)**
Calculus I

☐ **PHYS 008 (4)**
Physics I

☐ **MATH 032 (4)**
Statistics

☐ **BIO 001 (4)**
Contemporary
Biology

☐ **CSE 020 (2)**
Intro to Computing I

☐ **CSE 021 (2)**
Intro to Computing II

☐ **Arts/Humanities GE (4)**

☐ **Social Science GE (4)**

☐ **ENGR 097/197 (3)**
Or SSHA GE

☐ **ENGR 197 (3)**
Or Upper-Division SSHA GE

Materials Science & Engineering Core

☐ **ENGR 045 (4)**
Intro to Materials

☐ **MSE 110 (4)**
Solid State Materials
Properties

☐ **MSE 111 (4)**
Materials Processing

☐ **MSE 112 (3)**
Materials Selection
& Performance

☐ **MSE 113 (4)**
Materials
Characterization

☐ **MSE 120 (3)**
Materials Capstone
Design

Professional Seminar

☐ **ENGR 191 (1)**
Professional Seminar
#Taken Senior year

Students in the Materials Science & Engineering program are also required to take a minimum of 12 units of Technical Electives. For choices of Technical Electives please see the reverse side of this worksheet.

= Class restriction

Materials Science & Engineering Technical Electives

Choose a minimum of 12 units

MSE 114 (3)
Polymeric Materials

MSE 115 (3)
Ceramic Materials

MSE 116 (3)
Composites

MSE 117 (3)
New Materials

MSE 118 (3)
Intro to Nanotech &
Nanoscience

MSE 119 (3)
Materials Modeling

MSE 126 (3)
Nanodevice
Fabrication

ENGR 170 (3)
Intro to Electron
Microscopy

BIOE 110 (3)
Self-Assembling
Molecular Systems

BIOE 111 (3)
Biomembranes

BIOE 112 (3)
Biomolecule-
substrate Interactions

CHEM 112 (3)
Quantum Chemistry
& Spectroscopy

Students wishing to have an emphasis in
Nanotechnology should take the following:

MSE 126 (3)
Nanodevice
Fabrication

MSE 118 (3)
Intro to Nanotech &
Nanoscience

And at least one
of the following:

MSE 114 (3)
Polymeric Materials

MSE 117 (3)
New Materials

MSE 119 (3)
Materials Modeling

BIOE 110 (3)
Self-Assembling
Molecular Systems

ENGR 170 (3)
Intro to Electron
Microscopy

CHEM 140 (3)
Nanoscale Materials
Chemistry