

Name (Last Name, First Name)

Student ID #:

Quarter/Year Expected to Graduate:

Area of Emphasis:

Thesis/Comp Exam:

Thesis Advisor (if applicable):

COURSEWORK (MINIMUM OF 12 COURSES REQUIRED)

<u>CORE COURSES</u>	<u>COURSE</u>	<u>UNITS</u>	<u>GRADE</u>	<u>QTR</u>	<u>YR</u>	<u>Thesis</u>	<u>Comprehensive Exam</u>
Crystalline Solids	MSE 200	4				Minimum of 4 courses must be made up of core courses. All courses must be completed with a B (3.0) or higher.	Minimum of 4 courses must be made up of core courses. All courses must be completed with a B (3.0) or higher.
Fundamentals of Microfabrication or Advanced Manufacturing <small>(Not offered so students will take an extra emphasis course – General Petition needed)</small>	MAE 252 or ENGR 265	4					
Mechanical Behavior of Solids – Atomistic Theories	MAE 259	4					
Microimplants	BME 262	4					
Total Core Course Units							
EMPHASIS COURSES <i>Choose an Area of Emphasis (2nd page)</i>						Students must choose one area of emphasis. Minimum of 3 courses must be from the chosen area of emphasis.	Students must choose one area of emphasis. Minimum of 4 courses must be from the chosen area of emphasis.
Total Emphasis Course Units							
ELECTIVE COURSES						Students must fulfill a minimum of 5 courses . Up to 3 courses (12 units) of BME 296, CBEMS 296, CEE 296, EECS 296 or MAE 296 can count.	Students must fulfill a minimum of 4 courses . Up to 1 course (4 units) of research units (e.g.: 299 Individual Research) can count.
Students can take Engineering graduate-level courses numbered 200-289. No more than 2 upper-division (100+) Engineering undergraduate courses taken as a graduate student may be counted.							
Total Elective Units							
TOTAL UNITS							

Signature of Student: _____

Date: _____

Program Director: _____

Date: _____

There are four primary areas of emphasis within Materials and Manufacturing Technology (MMT): Chemical Processing and Production, Electronic and Photonic Materials and Devices, Biomedical and Electronic Manufacturing and Materials Engineering. Electives within each of the emphasis areas are listed below.

Elective Courses by Areas of Emphasis

Chemical Processing and Production	Electronic and Photonic Materials and Devices
CHEM 213 (Chemical Kinetics) CBE 200 (Applied Engineering Mathematics I) CBE 210 (Reaction Engineering) CBE 220A (Transport Phenomena I) CBE 240 (Advanced Engineering Thermodynamics) ENGRCEE 262 (Environmental Chemistry II) ENGRCEE 265 (Physical-Chemical Treatment Processes) ENGRCEE 276 (Hydrology)	BME 210 (Molecular and Cellular Engineering) BME 225 (Tissue and Organ Biophotonics) BME 251 (Engineering Medical Optics) EECS 174 (Semiconductor Devices) EECS 176 (Fundamentals of Solid-State Electronics and Materials) EECS 188 (Optical Electronics) EECS 277A (Advanced Semiconductor Devices I) EECS 277B (Advanced Semiconductor Devices II) EECS 277C (Nanotechnology) EECS 280A (Advanced Engineering Electromagnetics I) EECS 280B (Advanced Engineering Electromagnetics II) EECS 285A (Optical Communications) EECS 285B (Lasers and Photonics) ENGRMAE 220 (Conduction Heat Transfer) ENGRMAE 221 (Convective Heat and Mass Transfer)
Biomedical and Electronic Manufacturing	Materials Engineering
BME 222 (Biofluid Mechanics) BME 251 (Engineering Medical Optics) BME 260 (Microfluids and Lab-On-A-Chip) EECS 279/ENGRMAE 249 (Micro-Sensors and Actuators) ENGRMAE 212 (Engineering Electrochemistry: Fundamentals & Apps) ENGRMAE 242 (Robotics) ENGRMAE 247/EECS 278 (Micro-System Design) ENGRMAE 250 (Biorobotics) ENGRMAE 253 (Advanced BIOMEMS Manufacturing Techniques)	CHEM 225 (Polymer Chemistry) ENGRCEE 242 (Advanced Strength of Materials) ENGRCEE 254 (Advanced Reinforced Concrete Behavior and Design) ENGRCEE 255 (Advanced Behavior and Design of Steel Structures) ENGRMAE 212 (Engineering Electrochemistry: Fundamentals & Apps) ENGRMAE 224 (Advanced Transport Phenomena) ENGRMAE 230A (Inviscid Incompressible Fluid Mechanics I) ENGRMAE 230B (Viscous Incompressible Fluid Mechanics II) ENGRMAE 230C (Compressible Fluid Dynamics) ENGRMAE 254 (Mechanics of Solids and Structures) ENGRMAE 255 (Composite Materials and Structures) ENGRMAE 258 (Mechanical Behavior of Solids – Continuum Theories) ENGRMSE 205 (Materials Physics) ENGRMSE 241 (Nano-Scale Materials and Applications) ENGRMSE 254 (Polymer Science and Engineering) ENGRMSE 255A (Design with Ceramic Materials) ENGRMSE 256A (Mechanical Behavior of Engineering Materials) ENGRMSE 259 (Transmission Electron Microscopy) ENGRMSE 264 (Scanning Electron Microscopy) ENGRMSE 265 (Phase Transformations) ENGRMSE 273 (Electroceramics & Solid State Electrochemical Systems) PHYSICS 238A-238B-238C (Condensed Matter Physics)