

Student Name: \_\_\_\_\_ BU ID \_\_\_\_\_  
Advisor Signature: \_\_\_\_\_

MEng students must complete 32 credits: **2 Core MSE courses** (8 cr) MS 505 Thermodynamics and Statistical Materials **AND** MS 577 Electronic Optical and Magnetic Properties of Materials **OR** CAS PY 543 Introduction to Solid-State Physics. Students who demonstrate competence in a first-year 500-level thermodynamics and solid-state physics course through prior coursework may petition to substitute the core requirements by taking Other MS designated Core courses; **2 other structured MSE related courses** (8 cr); **1 structured Engineering Management Course** (4 cr); **3 Elective Courses** (12 credits) can be engineering, science, or engineering management courses including a **Practicum** requirement. A maximum of 3 engineering management courses (12 credits) may be used toward the degree. MEng students must maintain a cumulative GPA of 3.00 to remain in good academic standing and to graduate. All graduate courses are counted in the GPA. Grades of C- or lower are not acceptable for the MEng degree.

**CORE** (2 courses, 8 credits)

1. ENG MS 505 Thermodynamics and Statistical Mechanics Semester/Grade \_\_\_\_\_
2. ENG MS 577 Elec, Opt and Mag Prop of Matls Course/Sem/Grade \_\_\_\_\_

**OTHER DESIGNATED CORE COURSES**

(In place of above CORE, by petition only. See requirements above. Highlight courses selected.)

ENG MS 503 Kinetic Processes in Materials  
ENG MS 504 Polymers and Soft Materials  
ENG MS 508 Computational Methods in Materials  
Science

ENG MS 574 Physics of Semiconductor Materials  
ENG ME 582 Mechanical Behavior of Materials

Course/Semester/Grade \_\_\_\_\_

Petition Approved Date \_\_\_\_\_

Course/Semester/Grade \_\_\_\_\_

**STRUCTURED MSE RELATED COURSES** (Any 2 courses, 8 credits. Course list on reverse.)

Course/Semester/Grade \_\_\_\_\_

Course/Semester/Grade \_\_\_\_\_

**ENGINEERING MANAGEMENT** (1 course, 4 credits. Course list on reverse.)

Course/Semester/Grade \_\_\_\_\_

**PRACTICUM and ELECTIVES** (12 credits: **Practicum** (4 credits) EK 691, MS 539, MS 782, MS 925 Graduate Project, or MS 951 Independent Study **AND** any two other engineering, science or engineering management courses, if not used to satisfy other MEng requirements. Course list on reverse.)

1. **Practicum Course/Semester/Grade** \_\_\_\_\_
2. **Elective Course/Semester/Grade** \_\_\_\_\_
3. **Elective Course/Semester/Grade** \_\_\_\_\_

## COURSE LISTS

### STRUCTURED MSE RELATED COURSES (Any 2 courses, 8 credits.)

ENG BE 506 Phys Chem of Cell Structure and Machinery	ENG MS/ME 778 Micromachined Transducers
ENG BE 521 Continuum Mechanics for Biomedical Engineers	ENG MS/ME 781 Electroceramics
ENG BE 533 Biorheology	ENG MS/ME/BE 524 Skeletal Tissue Mechanics
ENG EC 560 Introduction to Photonics	ENG MS/ME/BE 726 Fundamentals of Biomaterials
ENG EC 575 Physics of Semiconductor Devices	ENG MS/ME/BE 727 Principles & Applications of Tissue Eng
ENG EC 578 Fabrication Tech for Integrated Circuits	ENG MS/BE 736 Biomedical Transport Phenomena
ENG EC 770 Guided-wave Optoelectronics	GRS CH 552 Materials Chemistry
ENG EC 776 Fundamentals of Nanoelectronics	GRS CH 552 Materials Chemistry
ENG EC 777 Nanostructure Optics	GRS CH 552 Materials Chemistry
ENG MS/BE/ME 523 Mechanics of Biomaterials	GRS CH 621 Biochemistry
ENG MS/BE/ME 549 Structure & Function Extracellular Matrix	GRS CH 629 DNA Nanotechnology
ENG MS/EC 573 Solar Energy Systems	GRS CH 631 Structure and Bonding
ENG MS/EC 764 Optical Measurement	GRS CH 631 Structure and Bonding
ENG MS/EC 774 Semiconductor Quant. Strctrs & Phot Dev	GRS PY 741 Solid State Physics I
ENG MS/ME 527 Trans. Phenomena in Matls Processing	GRS PY 741 Solid State Physics I
ENG MS/ME 530 Intro to Micro and Nanomechanics of Solids	GRS PY 742 Solid State Physics II
ENG MS/ME 532 Atomic Structure & Dislocations in Matls	GRS PY 742 Solid State Physics II
ENG MS/ME 535 Green Manufacturing	GRS PY 744 Polymer Physics
ENG MS/ME 545 Electrochemistry of Fuel Cells & Batteries	GRS PY 745 Experimental Surface Physics and Chemistry
ENG MS/ME 555 MEMS Fabrication and Materials	GRS PY 745 Experimental Surface Physics and Chemistry
ENG MS/ME 718 Advanced Topics in Nanotechnology	GRS PY 745 Experimental Surface Physics and Chemistry
ENG MS/ME 735 Computational Nanomechanics	GRS PY 771 Systems Biology for Physical Scientists & Eng
ENG MS/ME 742 Bio-fluids and Structural Mechanics	

### ENGINEERING MANAGEMENT (1 course, 4 credits.)

ENG ME 502 Intellectual Assets: Creation, Prot & Comm	ENG EK 731 Biomedical Innovation
ENG ME 517 Product Development	GSM OB 848 E1 The Leadership Challenge
ENG EC 518 Software Project Management	GSM PL 870 Gov't, Society, & the New Entrepreneur
ENG ME 525 Technology Ventures	GSM SI 839 Design and Innovation Strategy
ENG ME 550 Product Supply Chain Design	GSM SI 852 Starting New Ventures
ENG ME 583 Product Management	GSM SI 855 Entrepreneurship
ENG ME 584 Manufacturing Strategy	GSM SI 871 Strategies for Bringing Technology to Market
ENG ME 703 Managerial Cost Accounting	

### PRACTICUM and ELECTIVES **Practicum** (4 credits) **AND** any two other engineering, science or engineering management courses, if not used to satisfy other MEng requirements.)

ENG MS 500 Special Topics	GRS PY 745 Experimental Physics and Chemistry
ENG MS/ME 507 Process Modeling and Control	CAS CH 751 Advanced Topics in Physical Chemistry
ENG ME 516 Statistical Mechanical Concepts in Engineering	<b>ENG MS 782 Advanced Materials Characterization</b>
ENG MS/ME 526 Simulation of Physical Processes	ENG MS 784 Topics in Materials Science
ENG MS/ME 534 Matls Technology for Microelectronics	<b>ENG MS 925 Graduate Project</b>
<b>ENG MS 539 Intro to Materials Science and Engineering</b>	<b>ENG MS 951 Independent Study</b>
ENG MS/ME/EC 579 Microelectronic Device Mfg	
ENG MS/ME 580 Theory of Elasticity	
<b>ENG EK 691 Lean and Agile New Product Development</b>	
ENG MS 700 Adv Special Topics	