**Boston University** College of Engineering  
Division of Materials Science & Engineering  
**MS (Thesis) Program Planning Sheet**

Student Name: ________________________  
BU ID: ________________________  
Advisor Signature: ________________________

MS (Thesis) and Post-Bachelor PhD students must take 32 credits, all of which must be at the 500 level or higher. This must include **4 Core Courses, 2 Concentration Courses**, and 4 to 8 credits of **ENG MS 954 Thesis** (post-bachelor PhD students may substitute 4 to 8 credits of ENG MS 900) - both ENG MS 954 and ENG MS 900 satisfy the masters Practicum requirement; and up to 4 credits **Elective**. Only one 400-level course may be taken, with advisor approval, if needed as a prerequisite for another course in the program. MS 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 MS degree.

### CORE  
(Four courses, each from A, B, C and D. Circle the course used for A and D. 16 credits)

| A. | ENG MS 577 Elec, Opt, Mag Prop of Mtls OR CAS PY 543 Introduction to Solid State Physics (by instructor approval only)  
| B. | ENG MS 505/ME 505 Thermodynamics and Statistical Mechanics Semester/Grade ______________________________  
| C. | ENG MS 503/ME 503 Kinetic Processes in Materials Semester/Grade ______________________________  
| D. | ENG MS 574/EC 574 Physics of Semiconductor Materials or ENG MS 504 Polymers and Soft Materials or ENG MS 582/ME 582 Mechanical Behavior of Materials or ENG MS 508/ME 508 Computational Methods in Materials Science Semester/Grade ______________________________ |

### CONCENTRATION  
(Two courses from one area. 8 credits)

| A. Biomaterials  
ENG BE 506 Phys Chem of Cell Structure and Machinery  
ENG BE 521 Continuum Mechanics for Biomedical Engineers  
ENG MS/BE/ME 523 Mechanics of Biologics  
ENG MS/BE/ME 524 Skeletal Tissue Mechanics  
ENG BE 533 Biochemistry  
ENG MS/BE/ME 549 Structure & Function Extracellular Matrix  
GRS CH 550 Materials Chemistry  
GRS CH 621 Biochemistry  
GRS CH 629 DNA Nanotechnology  
ENG MS/ME/BE 726 Fundamentals of Biomaterials  
ENG MS/ME/BE 727 Principles & Applications of Tissue Eng  
ENG MS/BE 736 Biomedical Transport Phenomena  
ENG MS/ME 742 Bio-fluids and Structural Mechanics  
GRS PY 744 Polymer Physics  
GRS PY 771 Systems Biology for Physical Scientists & Eng |

| B. Electronic/Photonic Materials  
ENG EC 560 Introduction to Photonics  
ENG EC 575 Physics of Semiconductor Devices  
ENG EC 578 Fabrication Tech for Integrated Circuits  
GRS PY 741 Solid State Physics I  
GRS PY 742 Solid State Physics II  
GRS PY 745 Experimental Surface Physics and Chemistry  
ENG MS/EC 744 Optical Measurement  
ENG EC 770 Guided-wave Optoelectronics  
ENG MS/EC 774 Semiconductor Quant. Strctrs & Phot Dev  
ENG EC 776 Fundamentals of Nanoelectronics |

| C. Materials for Energy and Environment  
ENG MS/ME 527 Trans. Phenomena in Mats Processing  
ENG MS/ME 532 Atomic Structure & Dislocations in Mats  
ENG MS/ME 535 Green Manufacturing  
ENG MS/ME 545 Electrochemistry of Fuel Cells & Batteries  
GRS CH 550 Materials Chemistry  
GRS CH 631 Structure and Bonding  
ENG MS/EC 573 Solar Energy Systems  
GRS PY 741 Solid State Physics I  
GRS PY 742 Solid State Physics II  
GRS PY 745 Experimental Surface Physics and Chemistry  
ENG MS/ME 781 Electroceramics |

| D. Nanomaterials  
ENG MS/ME 530 Intro to Micro and Nanomechanics of Solids  
GRS CH 550 Materials Chemistry  
ENG MS/ME 555 MEMS Fabrication and Materials  
GRS CH 631 Structure and Bonding  
ENG MS/ME 718 Advanced Topics in Nanotechnology  
ENG MS/ME 735 Computational Nanomechanics  
GRS PY 745 Experimental Surface Physics and Chemistry  
ENG EC 777 Nanostructure Optics  
ENG MS/ME 778 Micromachined Transducers |

A. ☐ B. ☐ C. ☐ D. ☐ (select area completed)

Course/Semester/Grade ______________________________  

Course/Semester/Grade ______________________________

### THESIS  
(MS 954 Thesis, 4 to 8 credits. Post-Bachelors PhD students may use 4 to 8 credits of MS 900 Research.)

Course/Semester/Grade/Credit ______________________________  
Course/Semester/Grade/Credit ______________________________

### ELECTIVE  
(Optional; if only 4 credits of MS 954 or MS 900 are used to satisfy the Thesis requirement. Circle one course from the list below, or write in from above if not used to satisfy core, concentration or thesis requirement. 4 credits.  
Sem/Grade ______________________________)

| ENG MS 500 Special Topics  
ENG MS/ME 507 Process Modeling and Control  
ENG MS/ME 516 Statistical Mechanical Concepts in Engineering  
ENG MS/ME 526 Simulation of Physical Processes  
ENG MS/ME 534 Mats Technology for Microelectronics  
ENG MS 539 Intro to Materials Science and Engineering  
ENG MS/ME/EC 579 Microelectronic Device Mfg  
ENG MS/ME 580 Theory of Elasticity  
ENG EK 691 Lean and Agile New Product Development  
ENG MS 700 Adv Special Topics  
GRS PY 745 Experimental Physics and Chemistry  
CAS CH 751 Advanced Topics in Physical Chemistry  
ENG MS 782 Advanced Materials Characterization  
ENG MS 784 Topics in Materials Science  
ENG MS 900 PhD Research  
ENG MS 925 Graduate Project  
ENG MS 951 Independent Study  
ENG MS 700 Adv Special Topics  
GRS PY 745 Experimental Physics and Chemistry  
CAS CH 751 Advanced Topics in Physical Chemistry  
ENG MS 782 Advanced Materials Characterization  
ENG MS 784 Topics in Materials Science  
ENG MS 900 PhD Research  
ENG MS 925 Graduate Project  
ENG MS 951 Independent Study |

Sem/Gr _______  

Sem/Gr _______  

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