|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Course Number and Title* | *Credits* | *Completed* | *In Progress* | *Future* |
| Required Core Courses |  |  |  |  |
| MSE 605 Crystallography and Crystal Chemistry | 4 |  |  |  |
| MSE 608 Solid State Thermodynamics | 4 |  |  |  |
| MSE 618 Phase Transformations and Kinetics | 4 |  |  |  |
| Required Core Emphasis Course Choose at least one course from the following: MSE 510 Electrical, Optical, and Dielectric Materials (3 cr) MSE 512 Mechanical Behavior of Materials I (3 cr)PHYS 515 Solid State Physics (3 cr) | 3 |  |  |  |
| Required Characterization Course Choose at least 3 credits from the following (or alternative characterization course(s) approved by the Graduate Program Coordinator (GPC): CHEM 522 Spectroscopy (3 cr) CHEM 540 Spectrometric Identification (3 cr) CHEM 560 Introduction to NMR Spectroscopy (2 cr) MSE 521 Introduction to Electron Microscopy (3 cr) MSE 522 Advanced Transmission Electron Microscopy (2 cr) MSE 525 Surface Analysis (3 cr) PHYS 523 Physical Methods of Materials Characterization (3 cr) | 3 |  |  |  |
| Required Processing Course Choose at least 3 credits from the following (or alternative processing course(s) approved by the Graduate Program Coordinator (GPC): ECE 540 Intro to Integrated Circuit Processing (3 cr) ECE 540L Intro to Integrated Circuit Processing Lab (1 cr) ECE 541 Advanced Topics in Silicon Technology (3 cr) ECE 542 Photolithography (3 cr) ECE 543 Introduction to MEMS (3 cr) MSE 540 Advanced Processing (3 cr) MSE 542 Ceramic Processing (3 cr) MSE 545 Nanoscale Processing (3 cr) | 3 |  |  |  |
| Other Graduate Courses Additional elective courses in Materials Science and Engineering or related fields as approved by the supervisory committee and by the coordinator of the Materials Science and Engineering Doctoral program. | 15 |  |  |  |
| MSE 601 Graduate Student Orientation | 1 |  |  |  |
| MSE 691 Doctoral Comprehensive Examination | 1 |  |  |  |
| MSE 693 Dissertation | 30 |  |  |  |
| Total | 68 |  |  |  |