

Materials Science and Engineering Minor

Total Credit Hours: 18

Core Requirements (9 Credit Hours)

- EGN 3365 or EMA 3706: Structure and Properties of Materials
- EMA 3012C: Experimental Techniques in Materials I
- EMA 3124: Design and Selection of Materials

Restricted Electives (9 Credit Hours)

1. Properties of Materials (Select one course – 3 Credit Hours)

- EMA 4223: Fundamentals of Mechanical Behavior of Materials
- EMA 4413: Fundamentals of Electronic Materials
- EMA 5104: Intermediate Structure and Properties of Materials
- EMA 5415: Electronic Principles of Materials Properties
- BME 3211: Engineering Biomechanics
- EGN 3331C: Mechanics of Materials
- OSE 3052: Foundations of Photonics
- OSE 4520: Laser Engineering
- PHY 4445: Lasers
- PHZ 3422: Nanophysics
- PHZ 4404: Solid State Physics

2. Processing and Characterization of Materials (Select one course – 3 Credit Hours)

- EMA 3691: Nanomaterials Process Engineering
- EMA 4503: Materials Characterization Techniques
- EMA 4513: Structures of Materials
- EMA 5585: Materials Science of Thin Films
- EMA 5610: Laser Materials Processing
- BSC 4434: Biomedical Informatics: Sequence Analysis
- BSC 4439: Biomedical Informatics: Structure Analysis
- CHM 4230: Applied Molecular Spectroscopy
- CHM 4427: Electrochemistry
- CHM 5451C: Techniques in Polymer Science
- MCB 4721C: Methods in Biotechnology

- PCB 4174: Foundation of Bio-Imaging Science

3. Applications of Materials (Select one course – 3 Credit Hours)

- EMA 4506: Emerging Materials
- EMA 5060: Polymer Science and Engineering
- EMA 5140: Introduction to Ceramic Materials
- EMA 5584: Biomaterials
- EMA 5586: Photovoltaic Solar Energy Materials
- EMA 5705: High Temperature Materials
- BCH 4024: Medical Biochemistry
- BSC 3424: Nanobiotechnology
- CGN 3501C: Civil Engineering Materials
- EEE 3350: Semiconductor Devices
- EEE 4463: MEMS Devices and Applications
- ENV 4120: Air Pollution and Hazardous Waste Control
- MCB 3316H: Honors Biotechnology and Genetic Engineering Seminar
- MCB 4312: Molecular Biotechnology
- OSE 4410: Optoelectronics
- OSE 4721: Biophotonics
- OSE 5414: Fundamentals of Optoelectronic Devices
- PCB 4521: Tissue Engineering
- PUP 3204: Sustainability

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