The Department of Materials Science and Engineering offers the minor in Electronic, Optical, and Magnetic Materials for engineering science students or for non-engineering science students who seek to obtain a more thorough understanding of the engineering sciences. Emerging technologies in wireless communication, data storage and transmission, sensors, medical diagnostics, and semiconductor manufacturing require graduates with an understanding of electronics design, electromagnetic theory, and electronic and magnetic materials. The courses in the minor provide the student with a broad introduction to the engineering science principles and applications associated with electronic, optical, and magnetic materials.

Requirements for the Minor in Electronic, Optical, and Magnetic Materials (EOM)

- Completion of the minor requires 18 to 24 credits.

Requirements for students majoring in Engineering Science (ESG):

1. ESE 218 Digital Systems Design and ESE 380 Embedded Microprocessor Systems Design I
   or ESE 312 Microwave Electronics and ESE 315 Control System Design
2. Five courses chosen from:
   - ESG 201 Engineering Responses to Society
   - ESE 319 Introduction to Electromagnetic Fields and Waves
   - ESE 321 Electromagnetic Waves and Wireless Communication
   - ESM 325 Diffraction Techniques and Structure of Solids
   - ESM 336 Electronic Materials
   - ESM 369 Polymers
   - ESM 488 Cooperative Industrial Practice
   - ESM 499 Research in Materials Science

Requirements for all other students:

1. ESE 218 Digital Systems Design and ESE 380 Embedded Microprocessor Systems Design I
   or ESE 312 Microwave Electronics and ESE 315 Control System Design
2. ESG 100 Introduction to Engineering Science
   or ESE 123 Introduction to Electrical and Computer Engineering
   or MEC 101 and 102 Engineering Computing and Problem Solving I, II
3. ESG 201 Engineering Responses to Society
4. Three courses chosen from:
   - ESE 319 Introduction to Electromagnetic Fields and Waves
   - ESE 321 Electromagnetic Waves and Wireless Communication
   - ESM 325 Diffraction Techniques and Structure of Solids
   - ESM 336 Electronic Materials
   - ESM 369 Polymers
   - ESM 488 Cooperative Industrial Practice
   - ESM 499 Research in Materials Science