

# MATERIALS SCIENCE, MINOR

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College of Engineering

## Minor

There is a constant need for professionals with more knowledge and experience in understanding the behavior of materials from which products such as electronics, sensors, biological implants, transportation vehicles, medical devices and infrastructure are made. The goal of this minor is to prepare students for careers that require training in materials science, including the fundamentals of thermodynamics and kinetics and their effects on phase composition and structure, as well as the complex relationships between composition, structure, processing and behavior/performance. Topics covered include material thermodynamics and kinetics, materials structural analysis, and structure-property relationships for electronic, optical, magnetic and mechanical behavior. The minor is expected to accommodate persons of diverse backgrounds, such as those majoring in engineering, physical sciences, biological sciences, and mathematics.

All courses must be taken for a letter grade. A grade of C- or better is required for all courses used to satisfy minor requirements, with an overall GPA in minor requirement courses of 2.000 or better.

## Minor Advisor

S. Gentry (Department of Materials Science & Engineering)

| Code  | Title   | Units     |
|---|---|-----------|
| EMS 160   | Thermodynamics of Materials                           | 4         |
| EMS 162   | Structure & Characterization of Engineering Materials | 4         |
| EMS 164   | Kinetics of Materials                                 | 4         |
| EMS 172<br>or EMS 174   | Smart Materials<br>Mechanical Behavior of Materials   | 4         |
| Choose an additional 4 units of upper division letter graded Material Science & Engineering (EMS) coursework.   |   | 4         |
| Material Science & Engineering (EMS) courses. ( <a href="https://catalog.ucdavis.edu/courses-subject-code/ems/">https://catalog.ucdavis.edu/courses-subject-code/ems/</a> ) |   |           |
| <b>Total Units</b>  |   | <b>20</b> |