Sustainable Mineral Resources Minor

Customize your track!

Mining & Recycling • Leadership & Communication • Business & Economics • Data Analytics & Automation • Environmental • Health & Safety • Society & Policy

Core Courses
Minimum of 6 units of core coursework
One core course must be completed before starting electives (exceptions may be allowed with School approval)

- MNE/ENGR 422 Perspectives of Sustainability: Supplying Mineral Resources for Society – Gen Ed Fall 2022
- MIN 236 Materials, Societies, & Choices – New; Gen Ed Fall 2023

Core Courses
- *GEOS 251 Physical Geology (4 units)
- GEOS 446 Economic Mineral Deposits
- MNE 205 Introduction to Mining Engineering
- MNE 210 Mineralogy and Petrology for Engineers
- MNE 411 Mineral Processing
- *MNE 427 Geomechanics (3-4 units)
- MSE 450 Materials Selection for the Environment
- MIN XXX: Recycling and Reclamation

Leadership & Communication
- BNAD 302 Human Side of Organizations
- COMM 117 Culture and Communications
- COMM 201 Introduction to Public Relations
- COMM 312 Applied Organizational Communications
- COMM 404 Communications and Leadership
- ENV 415 Translating Environmental Science
- PR 423 Crisis Communication and Public Relations

Business & Economics
- ACCT 250 Survey of Accounting or BNAD 304 Survey of Finance
- GEOF 305 Economic Geography
- GEOF 362 Environment and Development
- MNE 205 Introduction to Mining Engineering
- MNE 430 Mine Examination and Valuation
- MGMT 202 Ethical Issues in Business or PHIL 322 Business Ethics
- SE 265 Engineering Management I
- SE 422 Engineering Decision Making Under Uncertainty

Data Analytics & Automation
- ESOC 214 Introduction to Data Science
- GEOF 222 Working with Numeric, Spatial, and Visual Data Fundamental Geographic Techniques
- GEOF 280 Programming and Data Analysis in the Earth Sciences
- MNE 205 Introduction to Mining Engineering
- MNE 430 Mine Examination and Valuation
- MGMT 202 Ethical Issues in Business or PHIL 322 Business Ethics
- SIE 265 Engineering Management I
- SIE 422 Engineering Decision Making Under Uncertainty

Environmental
- EHS 426 Topics in Environmental Justice or ENV 310 Ecosystem Health and Justice
- ENV 340 Environmental Chemistry
- ENV 428 Reclamation and Redevelopment of Impacted Lands
- HWRS 201 Water science and Policy
- HWRS 350 Principles of Hydrology
- PA 484 Environmental Management
- SIE 466 Life Cycle Analysis for Sustainable Design and Engineering

Health & Safety
- EHS 375 Introduction to Environmental & Occupational Health or EHS 484 Fundamentals of Industrial Hygiene
- EHS 418 Introduction to Human Risk Assessment
- MNE 424 Miner Health: Fitness-for-Duty, Mitigating, Exposures, and Managing Disease Risk
- MNE 423 Historic and Contemporary Role of US Regulatory Agencies (OSHA, MSHA, EPA) or PHP 421 Introduction to Public Health Law and Ethics
- *MNE 297A Underground Mine Safety (1 unit)
- *MNE 297B Operation and Maintenance of Heavy Mining Equipment (1 unit)
- *MNE 297C Fundamentals of Mine Rescue (1 unit)
- MNE 426 Health and Safety in Mining
- MNE 425 Mine Emergencies and Disasters: Prevention, Response, and Recovery

Society & Policy
- AIS 220 Contemporary American Indian Issues or GEC 250 Environment and Society in the Southwest Borderlands
- AIS 441A Natural Resource Management in Native Communities or ANTH 331 Anthropology and Development
- GEOF 462 Environmental Law, Geography, and Society or RNR 480 Natural Resources Policy and Law
- PA 482 Environmental Governance
- PHIL 323 Environmental Ethics
- RNR 485 The Economics & Social Connections to Natural Resources
- SBE 201 Sustainable Design and Planning
- SOC 307 Environmental Sociology

Capstone Experience
Minimum 3 upper division units (one unit completed in final semester)
Two pathways
1. Complete MIN 4XX: Capstone Course
2. Complete a combination of an internship, seminars, and/or research project.
   - *MIN 4XX: Seminar 1 (1 unit)
   - *MIN 4XX: Seminar 2 (1 unit)
   - *MIN 4XX: Seminar 3 (1 unit)
   - *MIN 4XX: Research Project (1 unit)
   - *MIN 4XX: Internship (1-2 units)
     - Requires alignment with interdisciplinary goal of School
     - Must be outside major
     - Approval from School advisor, program coordinator, or program manager

All courses are 3 units unless marked with an *. The number of units for courses marked with an * are given in parenthesis.

Study the interconnected environmental, social, technical, and economic issues surrounding the sustainable and responsible production and use of non-renewable mineral resources. Learn to work with people and value beliefs across disciplines, cultures, and national borders from diverse faculty. Implement critical thinking, effective communication, and data-driven decision making to bridge the gap between humans’ ever-increasing demand for minerals and societies’ changing priorities toward the environment and communities.