Sustainable Mineral Resources Minor

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.

THE UNIVERSITY OF ARIZONA
School of Mining & Mineral Resources

Customize your track!

Core Courses
Minimum of 6 units of core coursework
One core course must be completed before starting electives.
- *MNE/ANTH 201 Nonrenewable Resources and World Civilizations *(Diversity Emphasis; Building Connections; Tier 2 Natural Sciences)*
- MNE/ENGR 422 Engineering Sustainable Development *(GenEd Spring 2025)*
- MIN/GEOS/HWRS/MSE 236 Materials, Societies, & Choices *(GenEd Spring 2025)*
- MIN/MNE/GEOS/ENVS 226: A Balanced Future: Sustainability and Minerals *(GenEd Spring 2025)*

Mining & Recycling	Leadership & Communication	Business & Economics	Data Analytics & Automation	Environmental	Health & Safety	Society & Policy
• GEOS 251 Physical Geology *(4 units)* • GEOS 446 Economic Mineral Deposits • MNE 205 Introduction to Mining Engineering • MNE/GEN 210 Minerology and Petrology for Engineers • MNE/MSE 411 Mineral Processing • MNE 427 Geomechanics *(3-4 units)* • MSE/MNE 450 Materials Selection for the Environment	• BNAD/BAD 302 Human Side of Organizations • COMM 117 Culture and Communications • COMM/PR 201 Introduction to Public Relations • COMM 312 Applied Organizational Communications • COMM 404 Communications and Leadership • ENVS 415 Translating Environmental Science • PR 423 Crisis Communication and Public Relations	• ACCT 250 Survey of Accounting or BNAD/BAD 304 Survey of Finance • GEOG 305 Economic Geography • GEOG/EVS 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 • SIE/ENGR 265 Engineering Management I • SIE 422 Engineering Decision Making Under Uncertainty	• ESOC 214 Introduction to Data Science • *GEOG 222 Working with Numeric, Spatial, and Visual Data Fundamental Geographic Techniques *(Exploring perspectives: Social Scientist)* • GEOS 280 Programming and Data Analysis in the Earth Sciences • RNR/GEOG 403 Application of Geographic Information Systems • ISTA 131 Dealing with Data *(4 units)* • ISTA 321 Data Mining and Discovery • ISTA 322 Data Engineering	• ENVS 305 Pollution Science • EHS 426 Topics in Environmental Justice or *ENVS 310 Ecosystem Health and Justice *(Diversity Emphasis; Tier 2 Individuals and Societies; Building Connections)* • ENVS/GEOS/HWRS/SWES 340 Environmental Chemistry • ENVS 482 Reclamation and Redevelopment of Impacted Lands • *HWRS 201 Water science and the Environment *(Tier 2 Natural Sciences)* • HWRS 350 Principles of Hydrology • PA 484 Environmental Management • SIE 466 Life Cycle Analysis for Sustainable Design & Engineering	• EHS 375 Introduction to Environmental & Occupational Health or EHS/MNE/NSC/PCOL 484 Fundamentals of Industrial and Environmental Health • EHS/ENVS 418 Introduction to Human Risk Assessment • 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 423 Historic and Contemporary Role of US Regulatory Agencies (OSHA, MSHA, EPA) or PHP 421 Introduction to Public Health Law and Ethics • MNE 424 Miner Health: Fitness-for-Duty, Mitigating, Exposures, and Managing Disease Risk • MNE 425 Mine Emergencies and Disasters: Prevention, Response, and Recovery • MNE/GEN 426/426A Health and Safety in Mining	• *AIS 220 Contemporary American Indian Issues *(Diversity Emphasis; Tier 2 Individuals and Societies)* or *GEOG 250 Environment and Society in the Southwest Borderlands *(Exploring Perspectives: Social Scientist; Tier 2 Individuals and Societies)* • AIS/ANTH/ARL/ENVS/RAM/RNR/SWES/WFSC/WSM 441A Natural Resource Management in Native Communities or ANTH/LAS 331 Anthropology and Development • GEOG/EVS 462 Environmental Law, Geography, and Society or RNR 480 Natural Resources Policy and Law • PA/PPEL 482 Environmental Governance • *PHIL/PA/PPEL 323 Environmental Ethics *(Tier 2 Individuals and Societies; Building Connections)* • RNR/PA 485 The Economics & Social Connections to Natural Resources • SBE 201 Sustainable Design and Planning • SOC 307 Environmental Sociology

- Minimum of 9 units from one or two tracks
- At least 6 units must be upper division units
- Substitutions allowed for elective courses (must be approved by School advisor, program coordinator, or program manager)
- Encouraged, but not required, to take courses from outside student's major and other minors
- Elective tracks are not officially notated on student transcripts/diplomas

All courses are 3 units unless a different number of units is shown in parenthesis.

*All courses with * receive Gen Ed credit with the attribute shown in parenthesis.*

Capstone Experience
Minimum 3 upper division units (at least one unit completed in final semester)
Two pathways
1. Complete MIN 498: Senior Capstone course
2. Complete a combination of an internship, seminars, and/or research project.
   - MIN 396/496: Special Topics in Mining and Mineral Resources Seminar (1 unit each; can be repeated for 3 units total)
   - MIN 392/492: Directed Research (1 unit)
   - MIN 393/493: Internship (1-2 units)

   For Directed Research and Internships
   - Requires alignment with interdisciplinary goal of School
   - Encouraged to be outside major
   - Approval from School advisor