

Mining Engineering

College of Engineering

Mining engineering requires a broad knowledge of sciences and other fields of engineering in its practice after graduation. The curriculum below meets the requirements for a Bachelor of Science in Mining Engineering, provided the student satisfies the graduation requirements of the College of Engineering.

Admission to the program is selective. Students should refer to the UK *Bulletin* for general information concerning admission and graduation requirements.

Degree Requirements

Freshman Year

First Semester	Hours
EGR 101 Engineering Exploration I Δ §	1
EGR 102 Fundamentals of Engineering Computing	2
CHE 105 General College Chemistry I or PHY 231 General University Physics •	4
PHY 241 General University Physics Lab or CHE 111 General College Chemistry Lab I ∞	1
CIS/WRD 110 Composition and Communication I	3
MA 113 Calculus I	4

Second Semester

EGR 103 Engineering Exploration II Δ	2
CIS/WRD 111 Composition and Communication II	3
MA 114 Calculus II	4
PHY 231 General University Physics or CHE 105 General College Chemistry I •	4
UK Core (Social Sciences)	3

Sophomore Year

First Semester	Hours
EM 221 Statics	3
EES 220 Principles of Physical Geology	4
MA 213 Calculus III	4
MNG 201 Mining Engineering Fundamentals	3
PHY 232 General University Physics	4

Second Semester

EES 230 Fundamentals of Geology I	3
EM 302 Mechanics of Deformable Solids	3
MA 214 Calculus IV	3
ME 220 Engineering Thermodynamics I	3
MNG 291 Elements of Mine Design	3
MNG 303 Deformable Solids Laboratory	1
MNG 331 Explosives and Blasting	2

Junior Year

First Semester	Hours
ME 330 Fluid Mechanics	3
MNG 211 Mine Surveying	2
MNG 301 Minerals Processing	3
MNG 302 Minerals Processing Laboratory	1
MNG 335 Introduction to Mine Systems Analysis†	3
MNG 351 Underground Mine Design	3
UK Core (Humanities)	3

Second Semester

MNG 311 Electrical Circuits and Mining Machinery	3
MNG 322 Mine Safety & Health Management and Processes	2
MNG 371 Professional Development of Mining Engineers***	3
MNG 435 Mine Systems Engineering and Economics	4
MNG 463 Surface Mine Design	3
Minerals Processing Technical Elective*	3

Senior Year

First Semester	Hours
EM 313 Dynamics	3
MNG 332 Mine Plant Machinery	3
MNG 341 Mine Ventilation	3
MNG 551 Rock Mechanics	4
MNG 535 Environmental Control System Design and Reclamation	3
MNG 591 Mine Design Project I	1

Second Semester

MNG 592 Mine Design Project II	3
Technical Electives**	3
Supportive Elective††	3
UK Core (Citizenship-USA)	3
UK Core (Global Dynamics)	3

*The Mineral Processing Technical Elective is to be chosen between MNG 575, Coal Preparation Design, and MNG 580, Mineral Processing Plant Design.

**Courses recommended as technical electives are listed below. These courses must be chosen with the approval of the student's advisor to ensure that the curriculum includes sufficient engineering design content.

***Graduation Composition and Communication Requirement (GCCR) course.

†MNG 335 satisfies the Statistical Inferential Reasoning requirement in the UK Core.

∞ Confirm proper prerequisites.

• Based on advisor consult

Δ Both classes must be taken to fulfill UK Core: Arts & Creativity requirement.

§ Transfer students who declare a major will take EGR 112 Engineering Exploration for Transfer Students in place of EGR 101.

†† Supportive elective is any university course, excluding more elementary versions of required courses, such as precalculus mathematics or PHY 211.

Technical Electives: Of the two technical electives in the undergraduate program, students are required to select at least one from departmental courses. The remaining course, chosen with the approval of the student's advisor, can be used to fulfill specific educational goals.

MNG 511 Mine Power System Design
MNG 531 Advanced Blast Design and Technology
MNG 541 Computer Design of Mine Ventilation Systems
MNG 561 Mine Construction Engineering I
MNG 563 Simulation of Industrial Production Systems
MNG 572 Advanced Coal Preparation
MNG 575 Coal Preparation Design
MNG 580 Mineral Processing Plant Design
MNG 581 Geostatistics
MNG 599 Topic in Mining Engineering
BAE 438G Fundamentals of Groundwater Hydrology
CE 471G Soil Mechanics
CE 541 Intermediate Fluid Mechanics
EES 450G Sedimentary Geology

University of Kentucky is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate, baccalaureate, masters, and doctorate degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097, call 404-679-4500, or online at www.sacscoc.org for questions about the accreditation of University of Kentucky.