University of Kentucky

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
CHE 105 General College Chemistry I	4
CIS/WRD 110 Composition and Communication I	3
EGR 101 Engineering Exploration I § Δ	1
EGR 102 Fundamentals of Engineering Computing	2
MA 113 Calculus I	4
Second Semester	
CIS/WRD 111 Composition and Communication II	3
EGR 103 Engineering Exploration II § Δ	2
MA 114 Calculus II	4
PHY 231 General University Physics	4
PHY 241 General University Physics Laboratory **or** CHE 111 General Chemistry I Laboratory ¶	1
UK Core – Social Sciences	3

Sophomore Year

First Semester	Hours
EES 220 Principles of Physical Geology	4
EM 221 Statics	3
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
MNG 291 Elements of Mine Design	3
MNG 303 Deformable Solids Laboratory	1
MNG 322 Mine Safety and Health Management and Processes	2
MNG 331 Explosives and Blasting	2

Junior Year

First Semester	Hours
EM 313 Dynamics	3
MNG 211 Mine Surveying	2
MNG 301 Minerals Processing	3
MNG 335 Introduction to Mine Systems Analysis†	3
MNG 463 Surface Mine Design	3
UK Core – Humanities	3
Second Semester	
CE 341 Introduction to Fluid Mechanics	4
MNG 311 Electrical Circuits and Mining Machinery	3
MNG 371 Professional Development of Mining Engineers***	3
MNG 435 Mine Systems Engineering and Economics	3
MNG 551 Rock Mechanics	4

Senior Year

First Semester	Hours
MNG 332 Mine Plant Machinery	3
MNG 341 Mine Ventilation	3
MNG 351 Underground Mine Design	3
MNG 591 Mine Design Project I	1
UK Core – Citizenship - USA	3
Second Semester	
BAE 535/MNG 564 Environmental Control System Design and Reclamation	3
MNG 592 Mine Design Project II (UK Core – Arts and Creativity)	3
Minerals Processing Technical Elective*	3
Technical Elective**	3
UK Core – Global Dynamics	3

§ *Transfer students who declare a major will take EGR 215, Introduction to the Practice of Engineering for Transfer Students, in place of EGR 101 and EGR 103.*

Δ *Students must complete both EGR 101 and EGR 103 to fulfill the UK Core Arts and Creativity requirement. Transfer students may satisfy the UK Core Arts and Creativity requirement by taking EGR 215.*

¶ *Students only required to take one lab. Consult with advisor.*

**The Minerals 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.*

Technical Electives: Students are required to select their technical elective from the departmental courses listed below:

MNG 511 Mine Power System Design
MNG 531 Advanced Blast Design and Technology
MNG 541 Computer Design of Mine Ventilation Systems
MNG 552 Ground Control Software and Analysis
MNG 561 Mine Construction Engineering I
MNG 575 Coal Preparation Design
MNG 580 Mineral Processing Plant Design
MNG 599 Topic in Mining Engineering