

# 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.

## Freshman Year

First Semester	Hours
CHE 105 General College Chemistry I .....	4
CS 221 First Course in Computer Science for Engineers .....	2
CIS/WRD 110 Composition and Communication I .....	3
MA 113 Calculus I .....	4
MNG 101 Introduction to Mining Engineering .....	1
UK Core – Social Sciences .....	3

## Second Semester

CHE 107 General College Chemistry II .....	3
MA 114 Calculus II .....	4
MNG 191 Mine Graphics .....	1
MNG 264 Mining Methods .....	3
PHY 231 General University Physics .....	4
PHY 241 General University Physics Laboratory .....	1

## Sophomore Year

First Semester	Hours
EM 221 Statics .....	3
EES 220 Principles of Physical Geology .....	4
MA 213 Calculus III .....	4
MNG 331 Explosives and Blasting .....	2
PHY 232 General University Physics .....	4
PHY 242 General University Physics Laboratory .....	1

## Second Semester

EM 302 Mechanics of Deformable Solids .....	3
MA 214 Calculus IV .....	3
ME 220 Engineering Thermodynamics I .....	3
CIS/WRD 111 Composition and Communication II .....	3
MNG 291 Elements of Mine Design .....	2
MNG 303 Deformable Solids Laboratory .....	1
MNG 322 Mine Safety and Health Management and Processes .....	2

## Junior Year

First Semester	Hours
EE 305 Electrical Circuits and Electronics .....	3
EES 230 Fundamentals of Geology I .....	3
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

## Second Semester

EM 313 Dynamics .....	3
MNG 371 Professional Development of Mining Engineers .....	3
MNG 435 Mine Systems Engineering and Economics .....	4
MNG 463 Surface Mine Design and Environmental Issues .....	3
Minerals Processing Technical Elective* .....	3

## Senior Year

First Semester	Hours
MNG 332 Mine Plant Machinery .....	3
MNG 341 Mine Ventilation .....	3
MNG 551 Rock Mechanics .....	4
MNG 591 Mine Design Project I*** .....	1
UK Core – Statistical Inferential Reasoning .....	3
UK Core – Citizenship - USA .....	3

## Second Semester

MNG 592 Mine Design Project II (UK Core – Arts and Creativity) .....	2
UK Core – Global Dynamics .....	3
Technical Electives** .....	6
Supportive Elective .....	3
UK Core – Humanities .....	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.

\*\*\*At the time of publication, MNG 591 was being changed from 2 credit hours to 1 credit hour.

**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
EES 585 Hydrogeology