



# 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

CHE 105 General College Chemistry I .....	3
ENG 101 Writing I .....	3
MA 113 Calculus I .....	4
ME 105 Basic Engineering Graphics .....	2
MNG 101 Introduction to Mining Engineering .....	2
University Studies* .....	3

### Second Semester

CS 221 First Course in Computer Science for Engineers .....	2
CHE 107 General College Chemistry II .....	3
ENG 102 Writing II .....	3
MA 114 Calculus II .....	4
PHY 231 General University Physics .....	4
PHY 241 General University Physics Laboratory .....	1

## Sophomore Year

### First Semester

MNG 211 Surveying .....	4
MNG 264 Underground Mining Operations .....	2
EM 221 Statics .....	3
MA 213 Calculus III .....	4
PHY 232 General University Physics .....	4
PHY 242 General University Physics Laboratory .....	1

### Second Semester

COM 199 Presentational Communication Skills .....	1
ECO 201 Principles of Economics I .....	3
EM 302 Mechanics of Deformable Solids .....	3
MA 214 Calculus IV .....	3
ME 220 Engineering Thermodynamics I .....	3
MNG 303 Deformable Solids Laboratory .....	1
MNG 332 Mine Plant Machinery .....	3

## Junior Year

### First Semester

MNG 371 Professional Development of Mining Engineers .....	3
CE 341 Fluid Mechanics I .....	3
GLY 220 Principles of Physical Geology .....	4
MNG 301 Minerals Processing .....	3
MNG 302 Minerals Processing Laboratory .....	1
STA 381 Introduction to Engineering Statistics .....	3

### Second Semester

EE 306 Electrical Circuits and Machinery .....	3
EM 313 Dynamics .....	3
GLY 230 Fundamentals of Geology I .....	3
MNG 341 Mine Ventilation .....	3
MNG 363 Surface Mining Operations .....	3
University Studies* .....	3

## Senior Year

### First Semester

MNG 374 Mine Valuation and Investment Analysis .....	3
MNG 591 Mine Design Project I .....	1
MNG 551 Rock Mechanics .....	4
MNG 431 Mine Systems Engineering .....	3
Technical Elective*** .....	3
University Studies* .....	3

### Second Semester

MNG 592 Mine Design Project II .....	3
Technical Electives*** .....	6
University Studies* .....	6
Supportive Elective** .....	3

\*To be selected from University Studies areas in Social Sciences (6 credits), Humanities (6 credits), Cross-Cultural (3 credits) and Cross-Disciplinary (3 credits/one-half the requirement) in consultation with the academic advisor. A minimum of 18 credits in the humanities and social sciences are required.

\*\*The supportive elective is to be chosen from any University course excluding more elementary versions of required courses such as precalculus mathematics.

\*\*\*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.

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

- MNG 490G Explosives and Blasting Engineering
- MNG 511 Mine Power System Design
- MNG 561 Mine Construction Engineering I
- MNG 563 Simulation of Industrial Production Systems
- MNG 572 Advanced Coal Preparation
- MNG 575 Coal Preparation Design
- MNG 581 Geostatistics
- MNG 599 Topic in Mining Engineering
- BAE 438G Fundamentals of Groundwater Hydrology
- CE 441 Fluid Mechanics II
- CE 471G Soil Mechanics
- GLY 450G Sedimentary Geology
- GLY 585 Hydrogeology
- PLS 501 Reclamation of Disturbed Land