Mining engineers find, develop, and recover the resources needed to support the daily needs of society from the minerals required to support our daily health to the materials used for roads, buildings, computers, cell phones among most other items used daily. The mining engineering discipline requires a broad range of basic engineering skills along with the ability to apply specialized technical knowledge in the areas of geotechnical engineering, explosives engineering, ventilation, mine power systems, automation and control, environmental engineering and extractive metallurgy.

Pursuing Mining Engineering at UK

The mining engineering program at the University of Kentucky is one of only thirteen accredited programs in the U.S. The faculty members are well known and highly respected in their specialized area throughout academia and the industry. Thus, students receive the highest quality education and training from instructors with practical knowledge of the discipline. Hands-on instruction is provided in state-of-the-art laboratories that house modern equipment used in each of the specialty areas of mining engineering.

Students may directly enroll as pre-engineering students; however, there are minimum admission requirements. Minimum freshman entry requirements are an ACT Math score of 23 or higher or an SAT Math score of 540 or higher. Additionally, students must also meet the minimum Kentucky statewide academic readiness requirements for reading and writing. If you do not meet the initial admission requirements, please refer to the University of Kentucky Bulletin for alternative routes to admission to the College of Engineering.

Program Educational Objectives

After graduation, students will be able to:

• Advance in their career, adapting to new situations and emerging problems, through the application of general engineering skills and the core technical disciplines, analytical procedures and design practices of the mining engineering profession.

• Function ethically in a variety of professional roles such as mine planner, designer, production manager, mineral processing engineer, consultant, technical support representative and regulatory specialist.

• Demonstrate an understanding of the critical role mining engineers play in society with respect to health, safety, and the environment in tangible ways such as achieving professional licensure.

Experiential Education

The mining engineering program offers numerous opportunities to obtain hands-on experience through summer internships and co-operative education programs with mining companies that have operations throughout the U.S. These experiences often lead to full-time engineering professional positions upon graduation. For those interested in research, the program offers numerous undergraduate research opportunities in each of the specialized areas of mining engineering. Self-funding of all undergraduate education expenses is achievable by combining the funds earned from internship, co-op and research positions with the numerous scholarships that are available from the department and national societies and associations.

The Engineering Career Development Office is a valuable resource for assisting you with developing job, co-op and internship search skills; participating in education-abroad programs; participating in research endeavors and career network development so you can secure a rewarding career in your chosen field of study.

Student Involvement

Student organizations are an outgrowth of student interest and serve the needs of a variety of students. Many provide programs that supplement the classroom experience and extend into areas of service for the community. All provide learning and leadership training for participating students.

Student organizations that are typically of interest to mining engineering students include: the Norwood Student Chapter of the Society for Mining, Metallurgy and Exploration (SME), the International Society of Explosives Engineers (ISEE), Women in Mining and the Mu Nu Gamma Honor Society. Significant participation also occurs regionally and nationally.
Mining Engineering Curriculum Sample
This is a sample list of classes a student will take to pursue a degree in mining engineering. In addition to the mining engineering curriculum, students must complete the pre-engineering requirements and general education coursework, called UK Core.

Note: This sample represents one of several paths to a College of Engineering degree. Consult the departmental websites for details on specific paths.

### Freshman Year
- Intro to Mining Engineering 1
- Calculus I and II 8
- Composition & Communication I 3
- Chemistry I and II 7
- Physics I and lab 5
- Computer Science for Engineers 2
- Mine Graphics 1
- Mining Methods 3
- UK Core course 3
Total hours 33

### Sophomore Year
- Composition & Communication II 3
- Statics 3
- Calculus III and IV 7
- Physics II and lab 5
- Principles of Physical Geology 4
- Deformable Solids and lab 4
- Explosives and Blasting 2
- Thermodynamics I 3
- Elements of Mine Design 2
- Mine Safety and Health Management 2
Total hours 35

### Junior Year
- Electrical Circuits and Electronics 3
- Fundamentals of Geology 3
- Fluid Mechanics 3
- Mine Surveying 2
- Minerals Processing and lab 4
- Intro to Mine Systems Analysis 3
- Dynamics 3
- Professional Dev. of Mining Engrs 3
- Mine Systems Engr and Economics 4
- Surface Mine Design 3
- Minerals Processing technical elective 3
Total hours 34

### Senior Year
- Mine Plant Machinery 3
- Mine Ventilation 3
- Rock Mechanics 4
- Mine Design Project I and II 3
- Technical electives 6
- Supportive elective 3
- UK Core courses 9
Total hours 31

with the professional societies through attendance and active participation at professional meetings that are held across the U.S.

**Honors & Scholarship Opportunities**
Mining engineering students may also choose to participate in the UK Honors program. The College of Engineering, along with the Gatton College of Business and Economics, offers the Scholars in Engineering and Management (SEAM) program. SEAM is also a feeder program for the joint BS Engineering/MBA Program.

The College of Engineering awards scholarships to freshmen, continuing and transfer students. Most engineering scholarships are partial awards ranging from $500 to $5,000 per year and the average first-year scholarship ranges from $1,500 to $3,000.

Mining engineering students are automatically eligible for a Kentucky Mining Engineering Scholarship (KMES) which is awarded to freshmen on the basis of high school GPA and ACT scores and to upperclassmen on the basis of their UK cumulative GPA. Freshmen and sophomore students can receive up to $4,000 annually through the scholarship program while junior and senior students receive up to $6,000 annually. In addition, there are several scholarships available from the national societies.

**Career Prospects in Mining Engineering**
Retirements and growth in the mineral sector over the next 5 – 10 years are expected to create many openings for talented mining engineering graduates at annual salaries in the range of $60,000 to $72,000, which are among the highest of any B.S. graduate. As a result of the number of expected retirements, advancing up the career ladder is sure to be faster than most other professions. Opportunities in the mining engineering profession will always be available due to the need to provide resources for the nation and the world in a safe and environmentally-friendly manner.

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**The University of Kentucky’s Mining Engineering program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.**

Revised August 2015. Information subject to change. For the most up-to-date information on the UK College of Engineering, visit www.engr.uky.edu.