**MNG 101 INTRODUCTION TO MINING ENGINEERING**

Fall 2009 – Wednesday @ 4:00pm, 220 Chemistry Physics Building

(1 hour Lecture)

**Instructor:** Dr. Richard J. Sweigard, 371 RGAN 257-8827

**Course Description:** Orientation to the mining engineering profession; introduction to key mining engineering activities and functions; mining methods and equipment; health and safety subsystems.

**Course Objectives:**
1) introduce fundamental principles of mining engineering; 2) develop a sense of identity with the profession and an appreciation for the role of the mining engineer in society; 3) develop a thorough understanding of unit operations in both underground and surface mining; 4) acquaint students with fundamental mining engineering terminology; 5) introduce major analytical tools and techniques of the profession.

**References:**

**Topics:**

1. Orientation to College of Engineering and Department of Mining Engineering.
2. Student support services (scholarships, co-operative education, counseling, placement center, etc).
3. Institutional resources (libraries, computing facilities, laboratories, etc.).
4. The importance of mining in society.
5. The role of the professional mining engineer (tasks, responsibilities to society, ethics, professional registration).
6. Health and safety considerations (training, certifications, etc.).
7. Surface mining methods and unit operations.
8. Underground mining methods and unit operations.
9. Mine planning and development.
10. Mine subsystems (ventilation, ground control, drainage, power distribution, etc.).
11. Mineral processing overview.
12. Environmental impacts of mining.
13. Coal mining in Kentucky.
15. Challenges and future technological needs.
Student Should Be Able To:

1. Describe what will be her or his professional and ethical responsibility upon joining the mining engineering profession.  (f)

2. Recognize the structure of the College of Engineering, particularly the Department of Mining Engineering (faculty, student professional society, laboratory facilities, etc.) as part of the broad education necessary to understand the impact of engineering solutions in a global and societal context.  (h)

3. Outline and describe the major activities involved in the mine preplanning process as part of the broad education necessary to understand the impact of engineering solutions in a global and societal context.  (a), (h), (j)

4. Formulate and solve engineering problems by identifying underground and surface mining operations, mining methods and equipment used for these operations.  (a), (e)

5. Formulate and solve engineering problems by describing the importance and roles of the mine life support sub-systems: ventilation, ground control, and drainage.  (a), (e)

Grading:

Assignments 50%  
Final Exam 50%

Assignments will be in the form of small projects and will be assigned approximately every other week.

Grading Scale:

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<th>Grade</th>
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Attendance Policy:

Class attendance is required. A student must arrive within 5 minutes of the scheduled start of the class period and must stay for the remainder of the period to be credited for attendance for that meeting. Your grade will be reduced by 5 percentage points for each week — equivalent of class that is missed because of un-excused absences. For example, Since MNG 101 meets once per week, the following grade reduction would be incurred:

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<tr>
<th>Number of Un-excused Absences</th>
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Excused absences, as defined in the University Bulletin, are not counted in this total.