

Mine 206
SURFACE MINING SYSTEMS
Spring 2015

Catalog Data:

Surface mining methods, surface mining equipment, explosives and blasting design, and operational analysis.

Prerequisite: Geol 101

References:

H.L.Hartman (Senior Editor), SME Mining Engineering Handbook, 2nd Edition, SME, 1992

B.A.Kennedy (Editor), Surface Mining, 2nd Edition, SME, 1990

CAT Performance Handbook, Edition #42, 2012.

Note: All MS Power Point slides (converted to PDFs) containing course lectures will be available to students through the WVU e-campus system.

Instructor:

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Objective:

The objective of this course is to provide students in mining engineering with the necessary knowledge to design safe, efficient and environmentally responsible surface mining operations.

Topics:

1. INTRODUCTION
2. AN OVERVIEW OF SURFACE MINING OPERATIONS
3. SURFACE MINING METHODS
4. SURFACE MINING UNIT OPERATIONS
 - 4.1 Drilling and Blasting
 - 4.2 Digging and Loading
 - 4.3 Haulage
 - 4.4 Dragline Operations
 - 4.5 Crushing
 - 4.6 Auxiliary Equipment
5. ENVIRONMENTAL IMPACT OF SURFACE MINING OPERATIONS
6. HEALTH AND SAFETY CONSIDERATIONS IN SURFACE MINING

Exams and Homework:

Exam I - Surface mining methods and key elements of surface mines (10%)

Exam II - Drilling and Blasting (25 %)

Exam III - Shovel/Loader - Trucks System (25 %)

Exam IV – Crushing (5 %)

Exam V – Dragline Operations (5 %)

Exam VI - Auxiliary Operations (5 %)

In-class Review Paper on Managing Surface Mining Operations (5 %)

Exam VII – Environmental Impact of Surface Mining (10 %)

Exam VIII - Health and Safety in Surface Mining (10 %)

Evaluation:

Grade	%
A+	≥ 98
A	≥ 94 and < 98
A-	≥ 90 and < 94
B+	≥ 85 and < 90
B	≥ 80 and < 85
C+	≥ 75 and < 80
C	≥ 70 and < 75
D	≥ 60 and < 70
F	< 60

COURSE RULES:

Missed Exams and Late Homework Submission: The only acceptable excuses for missed exams and late homework submission are (i) a serious illness which requires medical attention (for which the students must supply proof or inform the professor before the scheduled exam and due date for homework submission, respectively) and (ii) a conflict with another legitimate academic activity. Late homework submission will result in 0% for that specific homework.

Classroom Behavior: no reading newspaper, no sleeping, no cellular phones, no text messaging, no talking to other students unless the professor asks to do so as part of class proceedings.

Academic Dishonesty - Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabricating of information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. Students who engage in academic dishonesty will receive F as a final grade.

Social Justice Statement – “West Virginia University is committed to social justice. I concur with that commitment and expect to foster a nurturing learning environment based upon open communication, mutual respect and non-discrimination. Our university does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestion as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

If you are a person with disability and anticipate any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with disability services (304-293-6700).”

Prepared by: Vladislav Kecojevic

Date: January 2015