

Mining 409 Syllabus FS2011 Mining Property Feasibility Studies & Evaluation Procedures

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I. COURSE DESCRIPTION

The student will be shown the proper methods of doing a mineral property field examination and evaluation, whether it is a mineral prospect, a reopening of a mine, or an ongoing operation. The student will be made aware of the pit-falls, which have led to mining industry “scams”, and how these are to be avoided. Likewise, the student will be made aware of the professional ethics and liabilities that are involved in performing mineral property evaluations.

There is a systematic, logical and prudent, phased approach to mineral property evaluation, which will be presented. During each phase, geology/resource, environmental issues, mining methods, metallurgical methods, and civil infrastructure needs are examined. At the end of each phase, the project will be tested to determine if the project should go forward, or be stopped without further company expenditure. Each phase is designed to increase the accuracy of cost estimates and to raise the level of confidence in overall project economics to the appropriation of funds for design and construction of the potential facility or the purchase of an ongoing facility.

If the project is to be financed from outside the company funds, following the evaluation, a bankable due diligence study must be made to present to those who can potentially supply the capital funds required. The content of a quality assurance procedure and check list will be presented for due diligence studies.

II. TEXT

Library and Internet assignments.

BlackBoard Detailed Lesson and reading assignment handouts.

III. OTHER REFERENCES

Evaluating Mineral Projects: Applications and Misconceptions, T. R. Torries, 1998, SME.

Mining Economics and Strategy, I. C. Runge, 1998, SME.

Mineral Valuation Methodologies 1994, VALMIN Committee, 1995, 2nd Ed., AusIMM..

The International Conference on Mine Project Development, Sir Arvi Parbo, Editor, 1997, AusIMM..

The Mining Valuation Handbook, Victor Rudenno, 1998, Wrightbooks, Victoria, Australia..

IV. GRADES

Grades (A=90-100, B=80-89.9, C=70-79.9, D=60-69.9 & F ≤59.9) will be based on:

<u>ITEM</u>	<u>Approximate Percent of Grade</u>
Library and Internet Assignment Homework Reports	20 %
Exams(Probably four exams)	80 %

V. TOPICS COVERED (Course Outline)

INTRODUCTION TO MINE FEASIBILITY STUDIES

- Why feasibility studies are done;
- Who do a the feasibility study: the multi-discipline approach;
- When the feasibility study should be done;
- Personal liability, professionalism, and ethics in mineral property evaluations;
- How to avoid being involved in a “mineral property scam”;
- Questions to ask during the site visits and information to be gathered.
 - Geology/Resource
 - Mine
 - Mill
 - Infrastructure
 - Placer (Deposit or Mine)

MINE FEASIBILITY STUDIES

- Preliminary Feasibility Study
 - What is covered
 - Level of Accuracy
- Intermediate Feasibility Study
 - What is covered
 - Level of Accuracy
- Final Feasibility Study
 - What is covered
 - Level of Accuracy

When to do a Test Mine

Project Design Basis Memorandum Development

DUE DILIGENCE REPORT

When they are used;

Who prepares them;

What is contained within a due diligence report;

Questions to ask and what to review.

OTHER SUBJECTS TO BE COVERED

Review of Cost Estimating Techniques;

Review of Cost of Capital and Rate of Return Determinations;

Review of Scheduling and Project Controls;

Mineral Property Development Time;

Extraordinary Events Leading to Risk and Investment Vulnerability Assessment
(3 lessons);

Concepts of Cost of Capital and Rate of Return;

Pricing and Trading of Mineral Commodities.

VI Important Information for Course Syllabi, 2010 Academic Year

All faculty are encouraged to provide students with a course syllabus to emphasize the expectations that students must meet in order to be successful in the courses they are taking. In addition to the important information that is typically included in a course syllabus, all faculty are encouraged to include information about the following:

- **Academic Alert System:** <http://academicalert.mst.edu>
All faculty are encouraged to utilize the online Academic Alert System. The purpose of the Academic Alert System is to improve the overall academic success of students by improving communication among students, instructors and advisors; reducing the time required for students to be informed of their academic status; and

informing students of actions necessary by them in order to meet the academic requirements in their courses.

- **Disability Support Services:** <http://dss.mst.edu>
Any student inquiring about academic accommodations because of a disability should be referred to Disability Support Services so that appropriate and reasonable accommodative services can be determined and recommended. Disability Support Services is located in 204 Norwood Hall. Their phone number is 341-4211 and their email is dss@mst.edu. Instructors may consider including the following statement on their course syllabus as a means of informing students about the services offered:

"If you have a documented disability and anticipate needing accommodations in this course, you are strongly encouraged to meet with me early in the semester. You will need to request that the Disability Services staff send a letter to me verifying your disability and specifying the accommodation you will need before I can arrange your accommodation."

- **Academic Dishonesty:** <http://registrar.mst.edu/academicregs/index.html>
Page 30 of the Student Academic Regulations handbook describes the student standard of conduct relative to the System's Collected Rules and Regulations section 200.010, and offers descriptions of academic dishonesty including cheating, plagiarism or sabotage. Additional guidance for faculty, including a description of the process for dealing with issues related to academic dishonesty, is available on-line at <http://ugs.mst.edu> .