

**MNE 697f Valuation of Mineral Properties  
Spring Semester 2008**

**Instructor:** David R. Hammond, Adjunct Professor

**Credit:** 1 credit, 100%

**Grade:** A,B,C,D,E

**Catalog Description:**

This course provides detailed background and practical application of valuation and risk analysis approaches for determining transaction values for mineral assets..

**Course Objectives:**

Students will be able to value a mining venture,

**Topics:**

**Course Introduction**

**Project Economics, Valuation and Financing Overview**

- Valuation Approaches
- Appraisal Theory & Practice
- Mining Industry Managerial Accounting Basics
- Reserves and Resources - Definitions & Disclosure Requirements
- A Brief History of Valuation in the Minerals Industry

**Cost Approach**

- Cost Approach Techniques
- Applications in Mineral Asset Valuation

**Income Approach**

- Fundamentals of cash flow modeling for mining projects
- Corporate vs Stand-Alone Basis
- Real Dollar vs Constant dollars analysis
- Terminal value issues
- Taxation
- Inflation
- Selecting the Discount Rate
- Selecting the Commodity Price
- Leveraged cash flow
  - Forms of Debt Financing
  - Sources of debt facilities
  - Lender Covenants
- Case Studies and Examples
- Current Industry Practice and Modeling Issues

**Market Approach**

- How to find comparables
- How to model comparables
- Use of Market Comps in negotiating
- Use of Market Comps in valuing securities

## **Risk Assessment**

- Concept and Measurement of Risk
- Quantitative Risk Modeling Approaches
  - Discrete (Case) Analysis
  - Sensitivity Analysis / Displays
  - Expected Value Analysis
  - Monte Carlo Simulation
  - Real Asset Pricing Models (Option Valuation)
- Practical Application and Realities of Risk Assessment Tools

## **Valuation Project Assignment (Introduction & Requirements)**

### **Examination**

<b>Grading:</b>	<b>Weight</b>
Final Exam	35%
Quiz	15%
Valuation Project	50%

### **Recommended Textbooks and References:**

Suggested text for reference and future use:

Economic Evaluation and Investment Decision Methods, F. J. Stermole and J. M. Stermole, Investment Evaluations Corporation, Golden, Colorado, 11<sup>th</sup> edition, 2006.

Evaluating Mineral Projects: Applications and Misconceptions, Thomas F. Torries, Society for Mining, Metallurgy and Exploration, Littleton, Colorado, 1998.

**Papers:** Handouts will be provided

### **Recommended Prerequisites:**

Familiarity with engineering economics techniques, particularly discounted cash flow analysis.

DRH: 10/13/08