



Subject: EBGN Number: 547

Course Title: Financial Risk Management

Section:

Semester/year: Spring 2019

Instructors or Coordinators: Ian Lange and Paul Zink

Contact information (Office/Phone/Email): Ian - EH 329/303-384-2430/ilange@mines.edu

Paul – EH 314/720-273-4905/pzink@mines.edu

Office hours Ian - MW 9:30-10:30 a.m.; Paul – M 2:00-3:00 p.m. & W 3:00-4:00 p.m.

Class meeting days/times: W 4:30-7:30

Class meeting location: EH 211

Web Page/Blackboard link (if applicable):

Teaching Assistant (if applicable):

Contact information (Office/Phone/Email):

Instructional activity: ____ hours lecture ____ hours lab ____ semester hours

Course designation: ____ Common Core ____ Distributed Science or Engineering

____ Major requirement ____ Elective ☒ Other (please describe ____ Core for MEE MS/PhD program____)

Course description from Bulletin:

Textbook and/or other requirement materials:

Required text: None, we will use journal articles and other readings

Other required supplemental information: Readings as specified/given on Canvas

Student learning outcomes: At the conclusion of the class students will...

1. Gain a basic proficiency in identifying and quantifying financial risks
2. Become acquainted with a variety of tools to mitigate and manage financial risk
3. Understand the potential impact of various external risk factors on financial results
4. Appreciate how the timing of business decisions can magnify or dampen financial risk
5. Be able to use qualitative factors to help manage financial risks
6. Understand the use of sensitivity analysis to prioritize financial risk
7. Build confidence to make rational, measured business decisions in the face of risk and uncertainty

Brief list of topics covered:

1. Identification of financial risks
2. Risk measurement / quantification

3. Risk mitigation / management
4. Financial risks in the enterprise
5. External risk factors

Policy on academic integrity/misconduct: The Colorado School of Mines affirms the principle that all individuals associated with the Mines academic community have a responsibility for establishing, maintaining and fostering an understanding and appreciation for academic integrity. In broad terms, this implies protecting the environment of mutual trust within which scholarly exchange occurs, supporting the ability of the faculty to fairly and effectively evaluate every student's academic achievements, and giving credence to the university's educational mission, its scholarly objectives and the substance of the degrees it awards. The protection of academic integrity requires there to be clear and consistent standards, as well as confrontation and sanctions when individuals violate those standards. The Colorado School of Mines desires an environment free of any and all forms of academic misconduct and expects students to act with integrity at all times.

Academic misconduct is the intentional act of fraud, in which an individual seeks to claim credit for the work and efforts of another without authorization, or uses unauthorized materials or fabricated information in any academic exercise. Student Academic Misconduct arises when a student violates the principle of academic integrity. Such behavior erodes mutual trust, distorts the fair evaluation of academic achievements, violates the ethical code of behavior upon which education and scholarship rest, and undermines the credibility of the university. Because of the serious institutional and individual ramifications, student misconduct arising from violations of academic integrity is not tolerated at Mines. If a student is found to have engaged in such misconduct sanctions such as change of a grade, loss of institutional privileges, or academic suspension or dismissal may be imposed.

The complete policy is [online](#).

Grading Procedures: First Assignments: 20%

Second Assignment: 25%

Third Assignment: 25%

Final: 30%

There are four assignments in this course. The assignments were chosen to fit the structure of a seminar course.

The first assignment is a 2-3 page summary of a situation in which a resource company faced challenges with one or more stakeholders, often a host or local government, that could have significant potential financial impacts. The summary will be completed in pairs and will include a brief background on the situation, key factors that led up to the event/challenge(s), the event or challenge the company faced, the potential financial cost of the event/challenge, and how the company might have mitigated or better managed the situation. The summaries will be presented in class and provide the foundation for a deeper in-class discussion on how the respective companies and stakeholders might have better handled the situations.

The second assignment is to review a natural resource company's disclosure of risk factors in its financial statements, identify the most important financial risks, and use objective methods and subjective factors to quantify the risks. This will be an individual assignment. A summary report should be produced that will explain the rationale for choosing the most significant risks and the methodology for quantifying the risks. The summary reports should be no longer than 4 pages.

The third assignment is to create a case study of the financial risks evident in four prominent natural resource transactions/events. Each study will be done in groups of 3-4 and will dive more deeply into identifying and quantifying the financial risks in each situation and will be expected to come to actionable conclusions on what could have been done better to anticipate, mitigate and manage each situation. Each group's findings will be presented to the class and provide a basis for a discussion by the entire class on key lessons learned/takeaways.

The final assignment is a presentation to the investment committee of a firm/bank credit committee based on a feasibility study of a deposit/play. We plan to pick three or four feasibility studies but if you have something you would like to use for this presentation then please let us know.

Coursework Return Policy: The goal is to get coursework feedback within two weeks.

Absence Policy (e.g., Sports/Activities Policy): Please notify us ahead of time if you will be absent for tests or the final.

Homework:

- Homework must be turned in before it is due to be graded – plan ahead.
- Exams: If you will be absent during a scheduled exam, you should schedule a make-up time before you leave.

Students with Disabilities: In guidance put forth by the Department of Justice and the Office for Civil Rights, it is incumbent upon us as an institution to ensure that students know where to seek assistance for disability-related accommodations or information. Inclusion of a disability support statement in syllabi is a national best practice and standard supported by ADA enforcement agencies and AHEAD (Association on Higher Education and Disability), as part of a multi-pronged approach to supporting an inclusive culture on campus.

As such, please include the following statement (italicized) in your course syllabi at Mines. Additionally, please make sure to underscore the statement pertinence and directive as part of your course welcome. Disability Support Services - The Colorado School of Mines is committed to ensuring the full participation of all students in its programs, including students with disabilities. If you are registered with Disability Support Services (DSS) and I have received your letter of accommodations, please contact me at your earliest convenience so we can discuss your needs in this course. For questions or other inquiries regarding disabilities or academic accommodations, I encourage you to visit disabilities.mines.edu for more information.

Discrimination, Harassment and Title IX - All learning opportunities at Mines, including this course, require a safe environment for everyone to be productive and able to share and learn without fear of discrimination or harassment. Mines' core values of respect, diversity, compassion, and collaboration will be honored in this course (More information can be [found here](#)) and the standards in this class are the same as those expected in any professional work environment. Discrimination or harassment of any type will not be tolerated. As a participant in this course, we expect you to respect your instructor and your classmates. As your instructor, it is my responsibility to foster a learning environment that supports diversity of thoughts, perspectives and experiences, and honors your identities. To help accomplish this:

- Course rosters are provided to the instructor with the student's legal name. I will honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records.
- If something is said or done in this course (by anyone, including myself) that made you or others feel uncomfortable, or if your performance in the course is being impacted by your experiences outside of the course, please report it to:
 - Me (if you are comfortable doing so)
 - Wellness Center- Counseling (<https://www.mines.edu/counseling-center/>)
 - Speak Up (<https://www.mines.edu/speak-up/>)- Anonymous Option

In this course, we will cultivate a community that supports survivors, prevents interpersonal violence, and promotes a harassment free environment. Title IX and Colorado State law protects individuals from discrimination based on sex and gender in educational programs or activities. Mines takes this obligation seriously and is committed to providing a campus community free from gender and sex-based discrimination. Discrimination, including sexual harassment, sexual violence, stalking, and domestic violence, is prohibited and will not be tolerated within the Mines campus community. If these issues have affected you or someone you know, you can access the appropriate resources here: <http://www.mines.edu/title-ix/>. You can also contact the Mines Title IX Coordinator, Karin Ranta-Curran, at 303-384-2558 or krcurran@mines.edu for more information.

It's on us, all of the Mines community, to engineer a culture of respect.

Detailed Course Schedule:

Note: Class is cancelled for March 27th (spring break) and for School holidays or MEE program issues.

Week 1: Natural Resource Fiscal Regime Issues I (Ian)

Week 2: Natural Resource Fiscal Regime Issues II (Paul)

Week 3: Financial Risk Assessment (Ian)

Week 4: Managing Corporate Financial Risk (Paul)

First Assignment Due

Week 5: Financial Risk and Project Evaluation / Black-Scholes (Paul/Ian)

Week 6: Example of Real Option Approaches to Valuation (Ian/Graham Davis)

Second Assignment Due

Week 7: Enterprise Risk Management Case Study (Paul/ Tom Brady)

Week 8: Fundamentals of Hedging (Ian)

Week 9: The Investor's View of Financial Risk (Paul)

Week 10: Insurance and its Limitations (Paul and Paul Prouty)

Week 11: Financial Risk and the Commodity Price Cycle (Paul)

Week 12: Case Study: Glencore / Xstrata; Repsol / Argentina

Third Assignment Week 12 and 13

Week 13: Case Study: Freeport / Indonesia; BP Deepwater Horizon

Week 14: Financial Risk and Industry Structure (Paul)

Week 15: Final Projects