



Soules College of Business

FINA 4356 – FINANCIAL RISK MANAGEMENT

Term: Fall/2024

Professor: Dr. Vishal Sharma

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Student (Office) Hours: Tuesday/Thursday
12:00pm to 1:30pm, or by appointment.

Course Dates: August 26, 2024 - December 14, 2024

Course Times: Tuesday/Thursday 2:00pm to 3:20pm

Classroom: 121

Prerequisite courses: FINA 3330

Course Overview and Objective

Focusing on Energy industry, this course covers financial derivatives and their use for risk management. Topics include: (1) the fundamental concepts and theoretical reasoning of each derivative, (2) the concept of risk and its relationship to uncertainty in business operations, (2) the severity and consequences of a given risk in a firm and appropriate risk measurement techniques, and (3) managing risk faced by firms, especially associated with fluctuating commodity prices/exchange rate/interest rate, especially associated with fluctuating oil/natural gas prices.

Student Learning Outcomes

Upon completion of the course, students should be able to:

- Identify and categorize the types of risks faced by energy firms, especially oil & gas firms.
- Explain risk taxonomy and its application to different risk frameworks.
- Assess the severity and consequences of a given risk in the energy industry.
- Suggest the various hedging techniques specific to oil & gas firms in energy risk management.
 - Explain how derivatives (e.g., forward contracts or options) are used to manage financial risk faced by energy firms
 - Access the economic rationale for risk management
 - Apply hedging techniques specific to oil & gas firms to “real world” practice, especially price risk of oil & natural gas
- Assess challenges related to technology, investment and regulation in the energy industry, and suggest potential risk management solutions.

What do I expect from you?

- Be prepared for the class with access to lecture slides that will be available on Canvas.
- Read the assigned chapters *before* the class and come prepared with questions.

- I like to interact. I do not want to sound like a recorded lecture. Therefore, I expect you to actively participate in the class during discussions.
- Treat your fellow students with respect and integrity. For group work, I expect participation and contribution from each individual member of the group.
- **Use of gadgets:** No cell phones or other devices please. I reserve the right to discipline any student (including reduction of grades) that violates this policy.
- **Laptops:** Some in-class work might require laptops; I will give you sufficient notice to bring your device in case I plan to teach some concepts using a laptop. However, students found to engage in other activities including web surfing, checking emails, or texting or communicating in other ways using laptops are subject to be disciplined, including reduction of grades.

What can you expect from me?

- Be prepared with course contents and answer all your questions either during the class or office hours.
- Respond to your questions or doubts on a timely basis.
- Make reasonable accommodation in case you face any difficulties in understanding concepts.
- Be fair in the grading process.
- Alter the structure of delivery to suit the requirements of the majority of the class.

Required Textbooks and Readings

- **Primary Textbook:** Fundamentals of Futures and Options Markets, 9th Edition John C. Hull. ISBN-13: 978-0-13-408324-7
- Additional readings as assigned during the course.

Calculator Policy

I advise you to invest in a good financial calculator; I personally own a Texas Instrument BA II Plus. I discourage using smart phone calculators during class. **Smart phone calculators are strictly prohibited during tests and exams.** If you have any problems or challenges with calculators, please contact me as soon as possible. During exams, you must completely erase any contents in the memory of your financial calculator *before* you start the exam.

Recommended Resources

- Read at least one financial newspaper every day!

Course Structure

This is an in-person class. I expect all students to attend every class unless they seek leave of absence **prior** to the class. Some topics or technical skills that are ancillary to the main course contents might be uploaded as a recorded video on Canvas. In that case, students must comply with in-class instructions to access and learn from recorded media.

Canvas

I use Canvas extensively in communicating with students. I will use Canvas to share all lectures slides prior to the class, assign homework or assignments, announce grades, send instructions or other communication to students, and engage in any other activity required for the smooth functioning of the class. I highly recommend keeping Canvas application updated, and allowing notifications, if you have not already switched them on, so that you don't miss any communications from me.

Tips for Success in this Course

1. **Participate.** I encourage interaction among students, and with me during the class or office hours. Interaction brings clarity of thought and ideas. It also exposes you to other perspectives and ideas which you might not have thought about. Participation allows you to clearly communicate your ideas and develop critical thinking, an extremely important skill for your career.
2. **Manage your time.** I understand you have commitments beyond this class. Try working in blocks of time and ensure you have enough room to finish assignments, allowing extra space for any challenges including tech issues that might pop up.
3. **Canvas.** I cannot stress enough about using Canvas to stay on top of class activities. Switch notifications on to ensure that you don't miss any communication from me. Be sure to enable notifications to be sent instantly or daily. ([Canvas Notification Guide](#))
4. **Do not fall behind.** If you feel you are starting to fall behind, check in with me as soon as possible so I can help in a timely manner. I strongly discourage last-minute requests.
5. **Ask for help if needed.** If you are struggling with a course concept, reach out to me and/or your classmates for support.
6. **Success on exams or tests:** Majority of my tests and exams comprise questions from assignments and in-class problems. Therefore, I advise you to religiously complete your assignments and understand the concepts and techniques used in solving problems. During lectures, I frequently signal important topics, concepts, or questions that have a strong possibility of appearing on tests. Therefore, I highly encourage you to attend lectures without fail.

Graded Course Requirements Information

Assignments

Assignments will help you better understand the course, more importantly, give you practice and prepare you for exams. I will upload them on Canvas and announce during the class or via email. It is your responsibility to check, access, and complete assignments before the due date. *Online assignments to be completed on Canvas may not be allowed access after the due date and time.* Note that assignments are individual responsibility; no collaboration is permitted, unless they are group assignments or stated explicitly to be a group responsibility. If you don't understand any part of your assignment, please get in touch with me immediately. Don't wait until the due date as I might not be available to help you. *Late submissions will not be awarded full grade.*

Exams

Exams are an important part of your grade. You will have two exams: Mid Term and Final. Refer to the course calendar for exam dates. Questions will include multiple choice and/or short answers. Both exams will be closed book, closed notes or any other resources. I will discuss the contents of the exams in advance in the class. If you have any significant reason for rescheduling an exam, please contact me as soon as you learn that might have to miss the exam.

Late Work and Make-Up Exams

Late work will not be awarded full grade. I will first grade your submission on your effort (not considering late submission), then apply the following deductions depending on the actual submission time: deduct 20% for submissions up to the first 24 hours after the due date and time, and incrementally 10% for every 24 hours thereafter.

Example: If you submitted your assignment within 24 hours after the due date and time, and let's say you earned 90 points (out of 100) not considering the late submission, your final grade will be $90 - (20\% \text{ of } 90) = 90 - 18 = 72$ points.

If you submitted your assignment after 24 hours but before 48 hours of the due date and time, then your final grade in the above example will be $90 - (30\% \text{ of } 90) = 90 - 27 = 63$ points.

I will accommodate make-up exams on a case-by-case basis, depending on the reason. My decision will be final in this regard.

Grading Structure

Activity	Percentage (%)	Grading Scale
Survey – Beginning of the class	5%	A - (90% or higher) B - (80 - 89%) C - (70 - 79%) D - (60 - 69%) F - (Below 60%)
End of Semester course evaluation	5%	
Assignments	30%	
Mid Term Exam	30%	
Final Exam	30%	
Total	100%	

Caution: All grades beginning Spring 2007 must be a "C" or better for the University Lower Division Core, Business Field of Study, Upper Division Business Core, and Major Area. The only "D" allowed will be in General and Business Electives. Thus, if you are taking this class as your fulfillment of upper division core for degree in business, you should achieve a "C" or better grade.

I will share an excel template that estimates the grade you earned; you must keep the sheet updated as you finish each activity to get an estimate of what grade you are likely to earn.

Attendance Policy

I highly value your and my time during the class. Attending classes not only gives you an opportunity to learn other perspectives but also opens your mind to fresh and innovative ideas, and critically evaluate all possible options. I signal important concepts, questions and topics during class that have a high likelihood of showing up on your tests. Therefore, I highly recommend you attend every class!

Use of Artificial Intelligence (AI) in this course

UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course (see below) is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy.

You can use AI programs (ChatGPT, Copilot, etc.) in this course. These programs can be powerful tools for learning and other productive pursuits, including completing assignments in less time, helping you generate new ideas, or serving as a personalized learning tool. However, your ethical responsibilities as a student remain the same. You must follow UT Tyler's Honor Code and uphold the highest standards of academic honesty. This applies to all uncited or improperly cited content, whether created by a human or in collaboration with an AI tool. If you use an AI tool to develop content for an assignment, you must cite the tool's contribution to your work. I encourage you to use AI tools to revise and edit your work (e.g., identify flaws in reasoning, spot confusing or underdeveloped paragraphs, or correct citations).

University Policies & Student Resources:

University policies and student resources are available on the University website and in Canvas under "Syllabus". These include policies on withdrawal from a class, use of artificial intelligence (AI) in the class, assignments and exams, students with special needs, military affiliated students, academic honesty and misconduct, and special absences. *You are required to keep yourself updated and comply with ALL policies.*

University policies may be found here: [University Policy](#)

Student resources may be found here: [Student Resources](#)

Calendar of Topics, Readings, and Due Dates

Note: This is a tentative schedule, and subject to change as necessary – monitor the course page for current topics and deadlines. In the unlikely event of a prolonged university closing, or an extended absence from the university, adjustments to the course schedule, deadlines, and assignments will be made based on the duration of the closing and the specific dates missed.

Week/Date	Topic	Assignment	
		Assigned	Due
Week 1 Tue, Aug 27, 2024 Thu, Aug 29, 2024	Overview of Risk Management / Careers in Finance Introduction to Risk Management		
Week 2 Tue, Sep 03, 2024 Thu, Sep 05, 2024	Futures and Forward contracts - Introduction F&F - Market structure	Assignment # 1	
Week 3 Tue, Sep 10, 2024 Thu, Sep 12, 2024	F&F - Hedging F&F - Interest rates		Assignment # 1
Week 4 Tue, Sep 17, 2024 Thu, Sep 19, 2024	F&F - Price determination Interest rate Futures	Assignment # 2	
Week 5 Tue, Sep 24, 2024 Thu, Sep 26, 2024	Swaps Swaps	Assignment # 3	Assignment # 2
Week 6 Tue, Oct 01, 2024 Thu, Oct 03, 2024	Options - Introduction Options - Types		
Week 7 Tue, Oct 08, 2024 Thu, Oct 10, 2024	Options - Types Revision		Assignment #3
Week 8 Tue, Oct 15, 2024 Thu, Oct 17, 2024	Midterm Exam <i>No in-person class</i>		
Week 9 Tue, Oct 22, 2024 Thu, Oct 24, 2024	Options - Trading strategies Options - Binomial	Assignment # 4	
Week 10 Tue, Oct 29, 2024 Thu, Oct 31, 2024	Options - Binomial in Practice Options - Black Scholes Merton Model		Assignment # 4

Week 11 Tue, Nov 05, 2024 Thu, Nov 07, 2024	Nov 4 is the last day to drop this class Options - ESOPs Options - Index and Currency options	Assignment # 5	
Week 12 Tue, Nov 12, 2024 Thu, Nov 14, 2024	Options - Futures options Options - Hedging (Greek Letters)		Assignment # 5
Week 13 Tue, Nov 19, 2024 Thu, Nov 21, 2024	Options - Interest rate options Options - Exotic options	Assignment # 6	
Week 14 Tue, Nov 26, 2024 Thu, Nov 28, 2024	VAR Credit Derivatives		Assignment # 6
Week 15 Tue, Dec 03, 2024 Thu, Dec 05, 2024	Other Derivative instruments Revision		
Week 16 Tue, Dec 10, 2024 Thu, Dec 12, 2024	TBD		