Instructor: Dr. Pratish Patel
Office: Bus 422
Office Hours: Tuesday / Thursday, 2:00 p.m. – 4:00 p.m.
Office Phone: (805) 756-1416
Email: ppatel29@calpoly.edu

Class Time & Place: Tuesday/Thursday, from 12:10 p.m. - 2:00 p.m. in room 3-302


Course Goals:

This course provides a broad overview of the field of derivatives. We will learn the analytic tools and financial theory necessary for understanding the uses and pricing of derivatives products like options, futures, forwards, and (maybe) swaps.

We will begin by covering various applications of derivative securities in managing various types of risks faced by corporations. The discussion will cover the management and hedging of currency risks, interest rate risks, commodity price risks and credit risk. The discussion includes how to

- use stock index futures to change portfolio beta;
- use stock index futures to hedge long term price risk?
- use forwards to manage currency risk?
- use options to hedge or speculate?

We will also cover, in detail, the valuation of these derivative securities using Binomial Trees. This will help you appreciate the fundamental valuation intuition. This will also help you to value existing derivative securities as well as those, which are yet to appear in the market.

BUS 442 has two main components: (1) a lecture/readings component that introduces the vocabulary and concepts and (2) a hands-on component that uses derivatives as part of a trading strategy. The hands-on component is a project. Students will replicate BERNIE MADOFF’s strategy.
Course Objectives:

Upon completion of BUS 442, students should be able to do the following:

- Use excel to analyze valuation and risks of derivatives;
- Explain the need for derivatives in the market place;
- Explain the difference between forwards and futures;
- Explain how futures and options can be used to hedge various risks;
- Explain how options can be used in a portfolio to enhance returns, and / or Sharpe ratio;
- Apply knowledge to identify opportunities and solve business problems (LO 1.1);
- Effectively participate in teams (LO 4.3).

Grading:

- Homework: 20% --- There will be five HW assignments. Some assignments will be group based;
- Pop Quizzes: 10% --- There will be three quizzes. You will choose the two best quizzes. The quizzes will be held at random times and they will cover HW assignments and lectures;
- Madoff Project: Presentation 25% and Write up 15%;
- Mini Project: 10% --- You will work in groups and use the Black Scholes formula;
- MidTerm: 20% --- The midterm will not cover option valuation.

If you miss class on the day of the Exam without a “verifiable” acceptable reason (e.g., death in the family; severe illness that requires a physician’s attention and a physician’s note), you will receive a grade of zero. Check out the exam dates – if these do not work for you then please drop the class.

Final Grade:

The final grade will be composed of a weighted average (based on the weights indicated) of the exam, a team project, and homework. The following distribution determines the final grade:

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<td>B-: 80 – 82</td>
<td>C-: 70 – 72</td>
<td>D-: 60 – 62</td>
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What I Expect From Students:

- Attend every class on time unless there is an emergency;
- Arrive to class well fed, well rested, and prepared to participate actively in class discussions;
- Read the assigned material before attending lectures;
• DO NOT Use class computers unless you are taking notes;
• No cell phone use, texting, use of iPads, etc., is permitted during the class period, except during the class break;
• Come to see me during office hours if you have any trouble at all with the material. Please do not wait until the day before an exam. It is best to clear up any misunderstandings as early as possible;
• If a mistake in grading occurs, please see me about it immediately.

What Students Can Expect From Me:

• I will explain the course objectives carefully;
• I will do my best to explain the material clearly and precisely;
• I will be available for students during office hours, or through email – I strongly encourage students to visit me during office hours or by appointment to clarify concepts;
• I will encourage participation and try to make the class dynamic;
• I will construct fair exams;
• I will grade examinations and other assignments fairly;
• I will encourage you to ask questions openly and without fear of embarrassment;
• I will provide an opportunity for you to make suggestions for improvements to the class (e.g., if you would like me to slow down or to repeat something I have done).

Additional Comments:

• Make-up exam will not be issued (the exception is for an extreme, verifiable emergency such as a debilitating illness or a death in the family). Everyone should take the exam on the assigned day at the assigned time. I will not grant any exceptions without a verifiable and accepted excuse!
• Homework assignments not submitted by the beginning of class on the due date will receive a grade of zero.
• If a class is missed, it is the student’s responsibility to obtain assignments, handouts, class notes, etc. (class notes should be obtained from fellow students). Much of the class material will be available on Poly Learn.

Course Policies:

Attendance Policy:

• I expect you to attend every class, on time, and to stay for the entire class period. You are responsible for the completion of all work assigned even if you miss a class.
• If you need to leave class early, please let me know before the class begins.
• If you have a legitimate reason for missing class, please let me know IN ADVANCE. Try to schedule job interviews during a time other than class time.

Classroom Conduct:

• I expect you to be punctual, alert, and prepared for every class.
• I expect you to be considerate to other students.
• Ask questions in class. If you are confused, more than likely several classmates are too.
• If you need extra help, please see me during office hours or during a mutually agreed upon time.

Cell Phones:

You may not use your cell phone in class. You may not leave class to use your cell phone. If you have an emergency that requires you to use your cell phone, please let me know in advance. There will be a break halfway through each class and you may use your cell phone. This goes for texting as well.

Computer Use:

During class time, you may not use the computer for any reason other than to take notes.

Ethics/Academic Honor Code:

By accepting admission to Cal Poly, you make a commitment to understand, support, and abide by the university’s honor code and the student computing policy without compromise or exception. The judicial board will handle all violations of the code. Any plagiarism or cheating will result in an automatic failure (F) for the course.

Grading:

I will handle all graded material objectively and fairly. If a mistake in grading occurs, you must notify me immediately. For ALL graded assignments, including the exam, you have ONE WEEK after the grades are distributed to discuss grading issues with me. If you do not address these issues within ONE WEEK of receiving the grade, there will be no modifications to the grade, even if it works in your favor. I will address all concerns quickly and equitably.

Contacting Me:

I am more than happy to help anyone who needs help either during office hours or through an appointment. I expect the following protocol:

• If you have any HW related questions (e.g. if a question is mis-specified or badly worded), then post the question on the POLY LEARN forum. I will not answer any such questions by email. I will check the forum every day and will try to respond by the end of the day.
• If you have any project related comment that you think would be useful for the whole class, then post them on the POLY LEARN forum.
• If you have any other comments or questions, then email me. I will try to respond within 24 hours.

Final Exam:
Final exam will be according to the University's scheduled date and time. The Area Chair and Dean MUST approve “Early” exams well in advance of the final exam date. This is pursuant to an academic senate resolution on the topic:
http://digitalcommons.calpoly.edu/senateresolutions/632/

FERPA (Family Educational Rights and Privacy Act):
It is a violation to FERPA to leave graded assignments in any public area (e.g., the hallway) or to discuss student academic matters with any person other than the student (except for University officials within the course of official duties).

The best way to comply with FERPA is to never discuss anything about a student except with the student himself/herself in private. Watch out for the casual inquiry, which could lure you into violation (e.g. phone call from somebody claiming to be a parent and wanting to discuss the student's academic status).

Special Needs:
Students needing special accommodations or special services should contact the Disability Resource Center (DRC), Building 124, Room 119, (805) 756-1395 or email drc@calpoly.edu as early as possible in the quarter. The needs for specialized services must be documented, verified by these units, and presented to me by the second week of class. I will do everything I can to enhance your learning experience.
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<tr>
<th>Date</th>
<th>Topic/Cases</th>
<th>Chapters</th>
<th>Homework</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>Introduction to Futures and Options: Course Overview</td>
<td>Chapter 1</td>
<td>HW#1 due on Tuesday of Week 2</td>
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<td>Week 2</td>
<td>Mechanics of forwards and pricing of forwards</td>
<td>Chapter 5</td>
<td>HW #2 due on Tuesday of Week 3</td>
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<td>Week 3</td>
<td>Mechanics of futures markets</td>
<td>Chapter 2</td>
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<td>Week 4</td>
<td>Hedging with futures</td>
<td>Chapter 3</td>
<td>HW #3 due Tuesday of Week 5</td>
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<td>Week 5</td>
<td>Mechanics of Option Markets and Trading Strategies</td>
<td>Chapter 9 and 11</td>
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<td>Week 6</td>
<td>Covered call portfolio</td>
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<td>MidTerm HW#4 due on Tuesday of Week 7</td>
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<td>Week 7</td>
<td>Introduction to Binomial Trees</td>
<td>Chapter 12</td>
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<td>Week 8</td>
<td>Black Scholes formula</td>
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<td>Week 9</td>
<td>Catch Up: Madoff and Mini project questions</td>
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<td>HW #5 due Tuesday of Week 6</td>
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<td>Week 10</td>
<td>Madoff Project –presentation and Review</td>
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<td>Week 11</td>
<td>Mini Project Review</td>
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