The project is due on or before your final exam day and time. Please remember that you will also have a short quiz, course debrief discussion, and course evaluations on that day also. The quiz is worth 1/2 of a normal quiz and includes a few straight-forward questions regarding your project.

On the project, you should have a group, selected an underlying risk, defined that risk as +F or -F, and done some futures-related work (Project exercises #1 and #2). The last part of the project builds on module 6-8 materials (positioning and pricing.) A suggested project outline is the following:

1. Definition of business problem and risk, including information on the reward-risk taste of our business group. Define a dollar or percentage loss limit for our exposure, and the associated probability that we permit of this loss or greater loss. In deciding on your risk limit, I suggest filling in the blanks in the following statement:

   We want only a _____ % chance of losing more than $ _____. The dollar loss limit should be a reasonable fraction of your total exposure.

2. Determine if your underlying exposure meets our risk limit. (Project #2 instructions.)

3. Brief overview of market outlook for our underlying over the period of your risk. (this view-forecast should be reasonable, but we don't have to spend a lot of time on it.) We require both a direction forecast and an associated description of our confidence or certainty in the direction forecast (our associated vol view.)

4. Propose and examine other derivative-based risk management tactics (mostly options). Present maturity (FV) pay-out (Optpos.xls-like) diagrams for different derivative strategies and reward-risk trade-offs that are consistent with your view.

	Level of Confidence			
Vol vs. market	Unsure-Vol	=Market	Sure-Stable	Vol vs. market
Direction vs. market view	View = Vol up	View = Vol stable	View = Vol down	Direction vs. market view
Up-Unsure	forward & options cheap	forward cheap & options fair	forward cheap & options expensive	Up-Sure
No direction - ?	options cheap	forward & options fair	options expensive	No direction - Sure
Down-Unsure	forward expensive & options cheap	forward expensive & options fair	forward & options expensive	Down-Sure

At a minimum, cover the scenario consistent with our market view and those scenario "neighbors" closest to the forecast scenario. For example, assume that our view is direction up and uncertain (volatility up- options cheap), marked X below:

	Level of Confidence			
Vol vs. market	Unsure-Vol	=Market	Sure-Stable	Vol vs. market
Direction vs. market view	View = Vol up (options cheap)	View = Vol stable (option prices fair)	View = Vol down (options expensive)	Direction vs. market view
Up-Unsure (forward cheap)	**X**	*		Up-Sure (forward cheap)
No direction - ? (forward price fair)	*	*		No direction - Sure (forward price fair)
Down-Unsure (forward expensive)				Down-Sure (forward expensive)

Presenting pay-off diagrams and discussion for your forecast view (X) and the neighboring (*) views should be sufficient.

Pricing analysis (our payoff diagrams should incorporate current futures and option quotes. OPTPOS.XLS is modified to permit this relatively easily as OPTPOSWK.XLS, and the spreadsheet may be downloaded from the syllabus web page - last section 9. Project Materials.)

An optional extension involves identifying cheapest way to do a trade. For example, using actual quotes, +F+P may cost more than +F-F+C. Analyzing implied vols across option strikes is an efficient way to identify relatively rich (expensive) and cheap options.

The futures contract maturity date for our risk should be close to December for the Fall semester and close to June for the Spring semester. We need to obtain the following information:

Closest to Maturity Futures Price and maturity date _____

Closest to maturity options listed below, and the option maturity date _____

	Calls		Puts	
At and out of the money	Strike Price	Price Quote	Strike Price	Price Quote
ATM	_____	_____	_____	_____
OTM	_____	_____	_____	_____

Sources include the Wall Street Journal, Bloomberg and the web pages referenced off the web syllabus page. Some example projects are also on that page.

5. Integrated Value @ Risk with Derivatives

   The easiest way to meet our risk management target is to hedge our exposure by buying or selling the number of futures contracts that lowers our price risk to the desired level. Based on the positions analyzed in 5), adding options to the risk management tool set complicates things a little. With options, we can (with the purchase of insurance) completely limit our loss level to some maximum. However, it seems reasonable to require that our total insurance cost not be significantly greater than our risk limit. Analogously, adding options to our exposure should not add to our downside at the critical loss limit underlying price level. Therefore, we shouldn't sell too many options for income.

   In the event that we take derivative positions that are greater than the number of futures contracts that mimic our underlying exposure, we must report these "non-hedging" derivative positions (that's the major piece of FAS 133 and IAS 39.).

   For this combined analysis, the module 4 and 7 worksheets together provide a template. Usually, a good way is to use Risksmpl.xls and Optposwk.xls for the two pieces of our work. Alternatively and still "under development," the spreadsheet Rskmange.xls may also be helpful in putting together a composite picture of each alternative that we examine.

6. Recommended strategy (which should be one of the alternatives that you've described.)