BUS 419   11-3
Advanced Derivative Securities

Rules for Submitting Final Exam: Answers to questions are to be typed, single spaced, of length 1 page *each* for all questions, 8"x11" standard paper, with 1" margin and type point not less than 12. (This assignment is typed in 12 point.) For questions with multiple parts, answer all parts of the question. Violations will be subject to deductions. Assignment is due in my office no later than 7PM on Dec.12, 2011.

DO ALL FOUR QUESTIONS (Do all parts of each question)

1.Compare and contrast the risk management practices for one firm from the financial group – Canadian chartered banks or US commercial banks or US investment banks – and one from the non-financial group – Canadian oil and gas companies; Global airlines or base metal miners. Be sure to identify and contrast the risk management techniques, risk reporting techniques and the amount and type of derivative usage. In addition, provide an assessment of the risk management strategies.

2. a) Outline the continuous time derivation of the Black-Scholes option pricing model. What assumptions are being made to derive the results?
b) What are the limitations of applying the model to actual options prices for: i) dividend paying stocks; and, ii) a different distributional assumption for stock prices?
c) What is meant by the delta, gamma and theta of a riskless hedge portfolio?

3. a) A long stock position can be "protected" by buying a put. How can the payoff on this portfolio of a stock and option be replicated using "dynamic hedging" strategies involving portfolios which combine only stock and bond positions? (Hint: Be sure to identify the difference between path dependent and path independent strategies.)
b) Describe the various forms of portfolio insurance. How would these various forms of portfolio insurance perform in the face of discontinuous movements in equity prices during: i) the October 1987 market break; and, ii) the collapse of Sept. 2008- March 2009?

4.a) **Describe** the delta, gamma and theta for a long position in a straddle spread (same X and T for put and call); a strip (2 puts and a call, same X and T); and a strangle spread (X for put less than for call, same T).
b) If each spread is constructed to be delta neutral and have the same initial value (the *V* is the same), then what can be said about the relative gamma and theta of the spread positions?