The Peter Drucker and Masatoshi Ito
Graduate School of Management
Claremont Graduate University

FINANCIAL DERIVATIVES
MGT 339
Fall 2007

James Mills
OFFICE: Burkle 226
TELEPHONE: 909.607.3151 during office hours only (no voice mail)
OFFICE HOURS: Thursdays 3:30 – 5:30 pm
E-Mail: james.mills@cgu.edu
In case I cannot be reached please contact
Edie Young (Faculty Support)
909.607.9042
edie.young@cgu.edu

STRUCTURE AND CONTENT:
The course reviews many of the recently created derivative products and how each can used to transform the financial risks of the corporation. Emphasis will be placed on the role that financial engineering plays in the successful execution of corporate strategy. The principal focus of this course will be on how derivative financial instruments can be used to manage or mitigate the various price risks that arise as a consequence of the company's pricing, sourcing, financing and on-going operational decisions. The course begins with a comprehensive theoretical development of futures, forwards, options and swaps. The course ends with an analysis of synthetic and hybrid products which have embedded derivative contracts.

WHO SH0ULD TAKE THIS COURSE?
This is an introductory course designed for the MBA students who are interested in finance. Completion of MGT 335 "Corporate Finance" or instructor permission is required. For MSFE students, this course is intended to complement the Mathematical Finance course. Knowledge of advanced mathematical techniques is not a requirement for this course.

If you take this class I presume that you are highly motivated, have a good sense of humor, are flexible and can deal with ambiguities and uncertainties, enjoy challenges, and sincerely want to master another sophisticated dimension of corporate finance. Like anything in life, you can only become good through practice and hard work and this class will give you every opportunity to work hard.

CLASS PARTICIPATION
Students are expected to prepare for class by reading the assigned material carefully and prior to the class session in which the material will be covered. It is your responsibility to master the examples in the text as well as the assigned end-of-chapter problems,
You should be prepared to discuss the assigned cases in detail. I will call on students randomly during the case discussion. You will be graded on the quality of your participation. If you are absent when a case is discussed you will receive a participation grade of zero for that day.

LECTURE NOTES, MODELS, ADDITIONAL PROBLEMS SETS AND EQUATION SETS

Are on the intranet site sakai.claremont.edu. Down load and print out the lecture notes as soon as you can. You will need the lecture notes for class.

REQUIRED TEXTS

Derivative Markets, Robert L. McDonald., (Addison-Wesley), Second Edition - 2006 (hereafter referred to as **DM**)

MGT 339 Course Packet (cases and reprints from HBS and Thunderbird Case Series) available for purchase at the Huntley Bookstore

OTHER RESOURCES

Principles of Corporate Finance, Brealey and Meyers, 2004

ELECTRONIC RESERVE

"Does Risk Management Add Value? The Evidence", Charles Smithson and Betty Simkins, Journal of Applied Corporate Finance-Volume 17 Number 3, Summer 2005

"Project Valuation: Progressing from Certainty through Passive Uncertainty to Active Project Management", Larry Chorn & Amit Sharma, Society of Petroleum Engineers SPE 77585, 2002

SUGGESTED RESOURCES – For your Library

The Complete Guide to Option Pricing Formulas, by Espen Gaardner Haug, (McGraw-Hill) 2007
Applied Math for Derivatives, by John S. Martin (Wiley) 2001
Structured Products and Hybrid Securities, by Satyajit Das (Wiley) 2001
Real Options: A Practitioner's Guide, by Tom Copeland and Vladimer Antikarov (Texere) 2001
Understanding Swaps, by John F. Marshall and Kenneth R. Kapner (Wiley) 2001
When Genius Failed: The Rise and Fall of Long-Term Capital Management, Roger Lowenstein (Random House) 2000
Bond Markets, Analysis and Strategies, by Frank J. Fabozzi (Prentice Hall) 2000
Against the Gods: The Remarkable Story of Risk, Peter L. Bernstein (Wiley) 1998
Managing Financial Risk, By Charles Smithson (McGraw-Hill) 1998
Credit Derivatives, by Satyajit Das (Wiley) 1998
Real Options, by Lenos Trigeorgis (MIT Press) 1998
Black-Scholes and Beyond, by Neil A. Chriss, (Irwin) 1997
Financial Engineering, by Lawrence Galitz (Irwin) 1995

COURSE OUTLINE

Section One/Section Two

Date/ Class	**Subject/Lecture Note Reference/Additional Readings/Cases**	**Readings/ Exercises (P)**
Sept. 20/21 Week 1	***Introduction to Financial Engineering and Financial Derivatives*** Fundamental Financial Engineering (Section One, Part A) Why Manage Risk (Section One, Part B)	**DM Ch 1-4 (P)** **Ch 2: 1,4,7,9, 10,12,14**

	"How Financial Engineering Can Advance Corporate Strategy" by Peter Tufano (course packet) "You Have More Capital than You Think" by Robert Merton (course packet)	**Ch 3: 3,5,6,8, 9,11** **Ch 4: 1,2,5,12, 13,16,18,19**
	Fundamentals of Pricing Yield Analysis (Section Two, Part A) Bond Pricing and Bond Price Volatility (Section Two, Part B)	**DM Ch 7.1, (P)** **Ch 7: 1-3,6-9, 11-13,15,17-18 20-21,24**
Sept. 27/28 **Week 2**	***Futures and Forwards*** Forwards and Futures (Section Three, Part A) Implied Forward Rates (Section Three, Part B) Currency Forwards (Section Three, Part C) Forward Price Curve and Energy Products (Section Three, Part D)	**DM Ch 5-6, (P)** **Ch 5: 2-5,7,8 10,12,15,16** **Ch 6: 1,2,6-8, 11**
Sept. 28/Oct 5 **Week 3** **Added Sessions**	***Swaps*** Interest Rate Swaps (Section Four, Part A) Fair Value Swaps (Section Four, Part B – pg 26-34 only) Currency Swaps (Section Four, Part C) Energy Swaps (Section Four, Part D) Forward Swaps (Section Four, Part E) ***Case: Enron Gas Services***	**DM Ch 8** **(P)** **Ch 8:2-7, 9, 12,14**
Oct 4/5 **Week 4**	***An Introduction to Options*** An Introduction to Option Pricing (Section Five, Part A) Option Boundaries (Section Five, Part B) Option Terminology (Section Five, Part C) Binomial Options (Section Five, Part D)	**DM Ch 9-11 (P)** **Ch 9: 1-4,7-8,14,15,17** **Ch 10: 1, 3-6,9,12,16,18** **Ch 11: 1,2,7,8, 12,14,16**
Oct 11/12 **Week 5**	***The Black-Scholes Option Pricing Model*** **Black-Scholes (Section Five, Part E)** Understanding the Greeks (Section Five, Part F) Additional Supplemental Files (Will not be covered in class) Stock Price Behavior (Section Five, Part G) From Discrete to Continuous (Section Five, Part H) BSM and Stochastic Calculus (Section Five, Part I)	**DM Ch 12-13 (P)** **Ch 12: 1,3-7,10,12,18** **Ch 13: 1-4,15-16**
Oct 18/19 **Week 6**	**Mid-term Exam**	
Oct 25/26 **Week 7**	***Options on Stock Indices, Currencies, and Futures Contracts*** First Generation (Section Six, Part A)	

	Synthetic Option Structures (Section Six, Part B) ***Case: Porsche Exposed***	
Nov 1/2 Week 8	***Options on Interest Rate Products*** Swaptions (Section six, Part C) Additional Supplemental Files (Will not be covered in class) Interest Rate Options (Section Six, Part C) ***Case: Risk Management at Apache***	**DM Ch 24**
Nov 8/9 Week 9	***Real Options and Other Corporate Application*** Real Options (Section Eight, Part A) "Note on Credit Derivatives" George Chacko and Peter Hecht "Capital Projects as Real Options: An Introduction", Timothy Luehrman, HBS 9-295-074 "Real Options Valuation when Multiple Sources of Uncertainty Exist", Lisa Meulbroek, "What's It Worth? A General Manager's Guide to Valuation", Timothy Leuhrman, Additional Supplemental Files (Will not be covered in class) An Algebraic Approach (Section Eight, Part B) Real Options Extended Example (Section Eight, Part C)	**DM Ch 16,17 (P) Ch 17: 1-3,5-6,8-10**
Nov 15/16 Week 10	***Exotic Options*** What are Exotics (Section Seven, Part A) Time Dependent Options (Section Seven, Part B) Path Dependent Options (Section Seven, Part C) Multi-factor Options (Section Seven, Part D) Multi-factor Options Extended (Section Seven, Part E) ***Cases: MW Petroleum (A) and (B)***	**DM Ch 14, 22 (P) Ch 14: 3-8,11,18,21**
No class session Nov 22/23 due to Thanksgiving Holiday		
Nov 29/30 Week 11	***Exotic Options (continued)*** Multi-factor Options (Section Seven, Part D) Multi-factor Options Extended (Section Seven, Part E)	
Dec 6/7 Week 12	***Design of Hybrid Instruments and Securities- Structured Notes*** Floating Rate Notes (Section Nine, Part A) Stripped Capped Floaters (Section Nine, Part B) Introduction to Structured Notes (Section Nine, Part C) Equity and Interest Rate Linked Notes (Section Nine, Part D) Currency Linked Notes (Section Nine, Part E) Commodity Linked Notes (Section Nine, Part F)	**DM Ch 15 (P) Ch 15: 1-5,7,14,16-18**
Dec 13/14 Week 13	***Design of Hybrid Instruments and Securities- Structured Notes*** Equity and Interest Rate Linked Notes (Section Nine, Part D) Currency Linked Notes (Section Nine, Part E)	

	Commodity Linked Notes (Section Nine, Part F) ***Case: Ticonderoga: Inverse Floating Rate Bond***	
Week 14	**Final Exam**	

The solutions to the problems in the McDonald text are on electronic reserve. You are expected to work on these problems on your own.

*****Calendar subject to change.***

Course Grading

Case Participation	10%
Examination #1	40%
Final Exam	50%

Examination #1 will cover everything up to and including the material through week 6 of the class. **The midterm will be held on Thursday evening, October 18 for section one and on Friday morning, October 19 for section two.** The Final will cover the material presented from week 8 through week 14 and will be administered during finals week per the schedule decided by the university.