MATH 485 / 585
Mathematical Finance (3 units)

Course Outline

Topics	# of Weeks
Introduction to Derivatives	0.25
Insurance, Hedging, and Simple Strategies: 1. An Introduction to Forwards and Options 2. Insurance, Collars, and Other Strategies 3. Introduction to Risk Management 4. Financial Forwards and Futures	1.75
Options: 1. Parity and Other Option Relationships 2. Binomial Option Pricing 3. The Black-Scholes Formula 4. Market-Making and Delta-Hedging 5. Exotic Options I	5.0
Advanced Pricing Theory: 1. The Lognormal Distribution 2. Brownian Motion and Ito's Lemma 3. The Black-Scholes Equation 4. Exotic Options II 5. Volatility 6. Interest Rate Models	6.0
Exams:	1.0

Textbook: Derivative Markets, 2nd Edition, by McDonald
Laboratory Materials for Mathematical Finance Using Excel, by Ohoe Kim

Requirements: Students need to read the textbook and finish assignments. Graduate students need to complete an additional project on a selected topic. Computer laboratories are an integral part of the course.

Note: The course covers the Financial Economics Segment in SOA exam M. The SOA catalog may change over time. Instructor needs to follow any updates to the catalog.

Adopted: January 2007