

Selected Topics in Economics

Economics 911

Section: G100

Term: 2012 Summer

Instructor: R. Jones

Discussion Topics:

This course introduces continuous time asset pricing models (option pricing) and the tools needed to apply them empirically. Emphasis is on applications to banking, risk management and regulation. Applications to natural resource management and real investments under uncertainty may be considered.

Application of the arbitrage valuation theory uses bits a pieces from a variety of areas: general equilibrium theory, numerical analysis, econometrics and financial institutions. The course is intended to provide applicable tools. Computer implementation (programming) is a large part. Homework assignments will involve programming in either Fortran or VBA, but have been feasible for those with no or little prior programming experience. Topics include:

Asset pricing: continuous time stochastic processes, arbitrage pricing models, default models
Numerical methods: finite difference solutions of partial differential equations, Monte Carlo methods, numerical optimization
Econometrics: estimation of continuous time processes, extreme value theory

Financial institutions: operation of futures, options, swaps markets; capital regulation; value at risk; inflation-linked bonds; foreign exchange derivatives
Credit risk: structural and reduced form models, securitization, credit derivatives, loan commitments, counterparty risk, copula approaches; rating transition models

Grading: Course grade will tentatively be based on homework problem assignments (40%), midterm exam (25%) and final exam (35%).

Required Texts: Portions of two texts will be used: Jaksa Cvitanic and Fernando Zapato, Introduction to the Economics and Mathematics of Financial Markets (2004); and Dominic OKane, Modeling Single Name and Multi-name Credit Derivatives (2008).

Recommended Texts:

Materials/Supplies:

Prerequisite/Corequisite: Graduate students outside of economics must seek permission of the instructor before enrolling in the course

Notes:

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Students requiring accommodations as a result of a disability must contact the Centre for Students with Disabilities at 778-782-3112 or csdo@sfu.ca

All students are expected to read and understand SFUs policies with regard to academic dishonesty (S 10.02 and S 10.03).

These policies are available at the following web addresses:

<http://www.sfu.ca/policies/gazette/student/s10-02.html> and

<http://www.sfu.ca/policies/gazette/student/s10-03.html>

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