Global Learning Semesters
Course Syllabus
Course: MATH-461 Financial Calculus
Department: Computer Science
Host Institution: University of Nicosia, Nicosia, Cyprus

Course Summary		
Course Code	**Course Title**	**Recommended Credit Hours**
MATH-461	Financial Calculus	3
Semester Offered	**Contact Hours**	**Prerequisites**
Spring	42	MATH-220: Statistics MATH-330: Differential Equations MATH-450: Probability
Department	**Level of Course**	**Language of Instruction**
Computer Science	Upper Division	English

Course Description

The following topics are covered: expectation versus arbitrage pricing, discrete processes, the binomial branch and tree models, continuous processes, stochastic calculus. Martingale representation theorem. Black – Scholes model, foreign exchange, equities, dividends and bonds, market price of risk, the interest rate market, single and multi-factor models, general stock model, log-normal and multiple stock models.

Instructor

Dr Haritini Tsangari

Course Aims and Objectives

To cover the theoretical foundations that are necessary for modeling stochastic processes in the financial world. Martingales and change of measure are introduced in the discrete time framework, allowing an accessible account of Brownian motion and stochastic calculus. Continuous processes are also covered.

Teaching Methods

The course is delivered through a mixture of lectures, handouts, tutorials, practical exercises and assignments.

Course Teaching Hours

42 hours (42 hours lectures/presentations/tutorials). The course is delivered during the Spring semester in 14-weeks (3 hours/week).

Evaluation and Grading

Class Participation/Homework/Quizzes:	0-30%
Mid-Term(s):	30-50%
Final Exam:	40-50%

Readings and Resources

Required Textbook
Baxter and Rennie, Financial Calculus: An Introduction to Derivative Pricing, Cambridge University Press, 1998, ISBN: 0-521-55289-3