

Faculty of Science

Course Code	Dept	Course Title	Credits , if any	Level (UG/PG) UG: Advanced UG level; PG: Postgraduate level	Prerequisites (if any)	Quota for Outside Students (if any)	Remarks, if any (Please specify if the medium of instruction is not English.)
BIOL6009	SBS	Advanced studies in Ecology & Biodiversity for postgraduate students	---	---	---	---	---
STAT6006	SAAS	Stochastic Calculus with Financial Applications	---	UG	---	---	---

THE UNIVERSITY OF HONG KONG
FACULTY OF SCIENCE

**Departmental Coursework Requirement 2011-12
(RPG intakes of September 2011 – August 2012)**

BIOL6009 Advanced studies in Ecology & Biodiversity for postgraduate students

This course aims to provide student centred learning opportunities which will be designed for each individual student. Students will be required to take parts of existing Masters courses or advanced courses from the BSc curriculum which are considered necessary for their particular needs and which they have not previously taken. Opportunities for internships with local conservation organizations (1 day per week over at least one semester), that will allow students to gain relevant practical experience, may also be available.

Assessment: Examination (70-80%) and continuous assessment (20-30%) depending on the studies selected; pass/fail

Contact Person: Professor G A Williams

STAT6006 Stochastic calculus with financial applications

This course is an advanced course on the option pricing theory. The course covers Black-Scholes equation and stochastic calculus, and interest models. Contents include: Brownian motion; introduction to stochastic calculus; arithmetic and geometric Brownian motion; Ito formula; Sharpe ratio and risk premium; Black-Scholes equation; risk-neutral stock-price process and option pricing; option's elasticity and volatility; Vasicek, Cox-Ingersoll-Ross, and Black-Derman-Toy models; delta-hedging for bonds and the Sharpe-ratio equality constraint; Black's model; options on zero-coupon bonds; interest-rate caps and caplets.

Assessment: 25% coursework, 75% examination.