SPRING 2019 - ACMA 815 G100

Class Number: 3956 ***Delivery Method: In Person***

COURSE TIMES + LOCATION:

Tu 12:30 PM – 2:20 PM
AQ 5008, Burnaby

INSTRUCTOR:

Gary Parker
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PREREQUISITES:

Permission of the Department.

Description

CALENDAR DESCRIPTION:

An introduction to stochastic models for the rate of return. Time series. Stochastic differential equations. Covariance equivalence principle. Applications. Students with credit for ACMA 820 may not take this course for further credit

COURSE DETAILS:

Overview of basic stochastic processes used to model the interest rate/rate of return in finance and actuarial science.

Time series: ARMA models

SDEs: White Noise process, Brownian motion, Ornstein-Uhlenbeck process, second order stochastic differential equation, CIR, etc.
Other models: Regime-Switching LogNormal, Wilkie model, ...

The main features of these processes will be investigated.

Methods for solving systems of stochastic differential equations (SDE) arising in studying portfolios of insurance policies will be presented.

Applications: pricing bonds, guarantees, etc.

Estimation and calibration of the models will be discussed

Grading

Assignments & Term Project

Final

NOTES:

All grading is subject to change.