SPRING 2019 - ACMA 815 G100

RATE OF RETURN MODELS (2)

Class Number: 3956 *Delivery Method: In Person*

COURSE TIMES + LOCATION:

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

INSTRUCTOR:

Gary Parker
gparker@sfu.ca
1 778 782-4818
Office: SC-K10562

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:

Course runs from Jan 3rd to Feb 14th.

Outline:

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	40%
Final	60%

NOTES:

All grading is subject to change.

Materials

RECOMMENDED READING:

Rate of Return Models, G. Parker, 2013

GRADUATE STUDIES NOTES:

Important dates and deadlines for graduate students are found here: http://www.sfu.ca/dean-gradstudies/current/important_dates/guidelines.html. The deadline to drop a course with a 100% refund is the end of week 2. The deadline to drop with no notation on your transcript is the end of week 3.

REGISTRAR NOTES:

SFU's Academic Integrity web site http://www.sfu.ca/students/academicintegrity.html is filled with information on what is meant by academic dishonesty, where you can find resources to help with your studies and the consequences of cheating. Check out the site for more information and videos that help explain the issues in plain English.

Each student is responsible for his or her conduct as it affects the University community. Academic dishonesty, in whatever form, is ultimately destructive of the values of the University. Furthermore, it is unfair and discouraging to the majority of students who pursue their studies honestly. Scholarly integrity is required of all members of the University. http://www.sfu.ca/policies/gazette/student/s10-01.html

ACADEMIC INTEGRITY: YOUR WORK, YOUR SUCCESS