FALL 2016 - ACMA 210 D100

MATHEMATICS OF COMPOUND INTEREST (3)

Class Number: 6459 *Delivery Method: In Person*

COURSE TIMES + LOCATION:

Tu 10:30 AM – 11:20 AM
BLU 10011, Burnaby

Th 9:30 AM – 11:20 AM
BLU 10011, Burnaby

EXAM TIMES + LOCATION:

Oct 5, 2016
5:30 PM – 7:20 PM
SWH 10041, Burnaby

Nov 2, 2016
5:30 PM – 8:30 PM
SWH 10041, Burnaby

Dec 8, 2016
8:30 AM – 11:30 AM
BLU 10021, Burnaby

INSTRUCTOR:

Barbara Sanders
bsanders@sfu.ca
778-782-9074
Office: SC-K10554

PREREQUISITES:

MATH 152.

Description

CALENDAR DESCRIPTION:

Measurement of interest, present value. Equations of value. Basic annuities: immediate, due, perpetuity. General annuities. Yield rates: cash flow analysis, reinvestment rate, portfolio and investment year methods. Amortization schedules and sinking funds. Bonds and other securities. Applications: real estate mortgages depreciation methods. Interest rate disclosure and regulation in Canada. Covers the interest theory portion of Exam FM of the Society of Actuaries. Students with credit for ACMA 310 may not take this course for further credit. Quantitative.

COURSE DETAILS:

Course Outline:

This course is an introduction to the mathematics of compound interest. The topics covered correspond to the course of reading of Exam FM of the Society of Actuaries and they include:

Measurement of Interest: Simple interest, compound interest, accumulation functions, present value, effective and nominal rates, forces of interest.

Equations of value: Basic problem, numerical results, unknown time, unknown rate of interest.

Basic Annuities: Immediate, due, perpetuities.

General Annuities: Payments at a different frequency than interest is convertible, continuous annuities, varying annuities.

Yield Rates: Cash flow analysis, reinvestment rate.

Amortization Schedules and Sinking Funds: Outstanding loan balance, varying series of payments, continuous payments.

Bonds and Other Securities: Types of securities, price of a bond, premium and discount, yield rates, callable bonds, serial bonds.

Applications: Real estate mortgages, interest rate disclosure and regulation.

Other: Inflation, yield curves, forward rates, spot rates, duration, convexity, immunization.

This course is accredited under the Canadian Institute of Actuaries (CIA) University Accreditation Program (UAP) for the 2016-2017 academic year. Achievement of the established exemption grade in this course may qualify a student for exemptions from writing certain preliminary exams. Please note, a combination of courses may be required to achieve a single exemption. Please see http://www.cia-ica.ca/membership/uap for full details.

Grading

Quizzes	10%
Midterm 1	25%
Midterm 2	25%
Final Exam	40%

NOTES:

All grading is subject to change.

Materials

REQUIRED READING:

Required Text:

Mathematics of Investment and Credit (6th ed.) by Samuel A. Broverman. Publisher: ACTEX
or
Mathematics of Investment and Credit (5th ed.) by Samuel A. Broverman. Publisher: ACTEX

***Note: Problem sets will be assigned based on end-of-chapter exercises in the 6th edition, which may differ from the 5th edtition.**

RECOMMENDED READING:

Mathematics of Compound Interest by M.V. Butcher & C.J. Nesbitt, pub: Ulrich's

Theory of Interest and Life Contingencies with Pension Applications by M.M. Parmenter, pub: Actex

The Theory of Interest (2nd ed.) by S.G. Kellison, Publisher: Richard D. Irwin Inc.

An Introduction to the Mathematics of Finance by J.J. McCutcheon & W.F. Scott, pub: Institute and Faculty of Actuaries

Financial Mathematics – A Practical Guide for Actuaries and other Business Professionals (2nd ed.) by Ruckman and Francis, pub: BPP Professional Education

Derivatives Markets (2nd ed) by Robert L. McDonald, pub: Addison Wesley

DEPARTMENT UNDERGRADUATE NOTES:

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

Tutor Requests:
Students looking for a Tutor should visit http://www.stat.sfu.ca/teaching/need-a-tutor-.html. We accept no responsibility for the consequences of any actions taken related to tutors.

REGISTRAR NOTES:

SFU's Academic Integrity web site http://students.sfu.ca/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