

FALL 2015 - ACMA 490 D100

## SELECTED TOPICS IN ACTUARIAL SCIENCE (3)

Class Number: 7535 Delivery Method: In Person

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### COURSE TIMES + LOCATION:

Tu 10:30 AM – 11:20 AM

AQ 5004, Burnaby

Th 9:30 AM – 11:20 AM

AQ 5004, Burnaby

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### INSTRUCTOR:

Yi Lu

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778-782-7231

Office: SC-K10558

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### PREREQUISITES:

Prerequisite: : Dependent on the topic covered.

## Description

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### CALENDAR DESCRIPTION:

The topics included in this course will vary from term to term depending on faculty availability and student interest.

### COURSE DETAILS:

#### **Course Title: Advanced Actuarial Models**

#### **Pre-requisites:**

ACMA 335 and STAT 330. STAT 380 is recommended

#### **Course Description:**

Advanced non-life insurance mathematics. Individual risk models, collective risk models, ruin models. Actuarial reserve models: Bonus-malus system, IBNR techniques. Generalized linear models in Actuarial Science.

#### **Course Outline:**

The main objective of this course is to review advanced actuarial models in non-life insurance and to introduce some methods which are relevant for actuarial practice. The topics covered by this course are the following:

1. Some topics on individual risk models and collective risk models.
2. Classical risk process and ruin theory.
3. Some practical methods: Bonus-malus system, IBNR techniques.

#### 4. Topics on generalized linear models (GLM) with applications in actuarial statistics.

### Grading

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Assignments, Presentation, and Project 50%

Exam 50%

#### NOTES:

***Grading is subject to change.***

### Materials

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#### RECOMMENDED READING:

Loss Models, 3rd Edition, by S.A. Klugman, H.H. Panjer and G.E. Willmot; Publisher: Wiley.

An introduction to Mathematical Risk Theory, 1979, by H.U. Gerber; Publisher: S.S. Huebner Foundation for Insurance, U. of Pennsylvania

Modern Actuarial Risk Theory, 2001, by R. Kaas, M. Goovaerts, J. Dhaene and M. Denuit; Publisher: Kluwer Academic Publishers.

A Course in Credibility Theory and its Application, 2005, by Hans Bühlmann and Alois Gisler; Publisher: Springer.

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#### DEPARTMENT UNDERGRADUATE NOTES:

##### **Students with Disabilities:**

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

##### **Tutor Requests:**

Students looking for a Tutor should send an email to [stat@sfu.ca](mailto:stat@sfu.ca) with "Tutor Request" in the subject line. Please only include information that you would like forwarded to our tutors mailing list (contains people external to the University). We accept no responsibility for the consequences of any actions taken related to tutors.

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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>

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