STA4509H, Insurance Risk Models 1, Fall 2015

<table>
<thead>
<tr>
<th>Lecture times, location</th>
<th>Wed 14:00 - 17:00 – SS6004</th>
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<tr>
<td>Instructor</td>
<td>Dr. Andrei Badescu, SS6024</td>
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<td>Instructor office hours</td>
<td>By appointment</td>
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Course Objective:

This course is designed to introduce you to some research topics in Mathematical Risk Theory.

Texts

I will use different books and several research papers. There is no mandatory textbook required. The notes from class will suffice.


Approximate Coverage:

1) Discrete distributions

- Frequency distributions
  o The (a,b,0) and (a,b,1) classes
  o Discrete Phase-type distributions (if time permits)
  o Mixed frequency distributions
- Compound frequency models

2) Continuous distributions

- Severity distributions
  o Coxian and related distributions
  o Mixture of Erlangs distribution
  I. Subclasses
  II. Distributional properties
III. Denseness
   o Phase-type distributions
     • Compound loss models

3) Multivariate Distributions
4) Risk Measures
5) Aggregate loss model - applications
   a. Ruin Theory
   b. Stochastic Claim reserving
   c. Operational Risk

Marking Scheme:

The final course mark will be determined based on a final presentation worth 100%. The final presentation will be based on research papers assigned to you in class.

Oral Presentation - last two weeks of the term, after the Insurance Risk Models 2.

Deadline to drop the course – 23rd of September.

Updates

Blackboard will be used for all the information related to this course. The student should check this regularly.