Klugman, S.A., Panjer, H.H. and Willmot, G.E. (2012). Loss Models: From Data to Decisions, 4th edition, Wiley, Hoboken, NJ.

Chapters 10 through 20 of the "Loss Models" (4th edition) textbook will be covered. Specific topics are:

A. Construction of Empirical Models

1. Estimate failure time and loss distributions using

- 3. Estimate the variance of estimators and the confidence intervals for the parameters and functions of parameters of failure time and loss distributions.
- 4. Apply the following concepts in estimating failure time and loss distributions:
 - a) Unbiasedness
 - b) Asymptotic unbiasedness
 - c) Consistency
 - d) Mean squared error
 - e) Uniform minimum variance estimator
- 5. Determine the acceptability of a fitted model and/or compare models using:
 - a) Graphical procedures
 - b) Kolmogorov-Smirnov test
 - c) Anderson-Darling test
 - d) Chi-square goodness-of-fit test
 - e) Likelihood ratio test
 - f) Schwarz Bayesian Criterion

C. Credibility

 $1. \ Apply \ limited \ fluctuation \ (classical) \ credibility \ inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (y \ i) 9 (n) - 4 (c) 3 ib AeI (\) - 3686.62 \ Track (a) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (y \ i) 9 (n) - 4 (c) 3 ib AeI (\) - 3686.62 \ Track (a) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (y \ i) 9 (n) - 4 (c) 3 ib AeI (\) - 3686.62 \ Track (a) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (y \ i) 9 (n) - 4 (c) 3 ib AeI (\) - 3686.62 \ Track (a) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (y \ i) 9 (n) - 4 (c) 3 ib AeI (\) - 3686.62 \ Track (a) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (y \ i) 9 (n) - 4 (c) 3 ib AeI (\) - 3686.62 \ Track (a) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (y \ i) 9 (n) - 4 (c) 3 ib AeI (\) - 3686.62 \ Track (a) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (y \ i) 9 (n) - 4 (c) 3 ib AeI (\) - 3686.62 \ Track (a) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (y \ i) 9 (n) - 4 (c) 3 ib AeI (\) - 3686.62 \ Track (a) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (y \ i) 9 (n) - 4 (c) 3 ib AeI (\) - 3686.62 \ Track (a) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (y \ i) 9 (n) - 4 (c) 3 ib AeI (\) - 3686.62 \ Track (a) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (y \ i) 9 (n) - 4 (c) 3 ib AeI (\) - 3686.62 \ Track (a) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (y \ i) 9 (n) - 4 (c) 3 ib AeI (\) - 3686.62 \ Track (a) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (y \ i) 9 (n) - 4 (c) 3 ib AeI (\) - 3686.62 \ Track (a) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050 (lit) - 4 (b) 1 inclu2 \ reW \\ \hat{n}.050$

4. Use the bootstrap method to estimate the mean squared error of an estimator.

5. Apply simulation methods within the context of actuarial models.

OWL is Western University's online learning management system. Relevant readings, assigned

practice questions, slides and announcements will be posted on the course OWL web page. It is

the students' responsibility to check the course owl site regularly.

Some practice questions will be assigned in class to help students understand the material.

These questions are important in the preparation for the midterms and the final exam.

Two midterm tests will be given. The first midterm is 50 minutes and will be held on October 2

in class. The second midterm is 110 minutes and will be held on November 8 in class.

The date and time for the 3-hour final exam will be announced by the registrar's office, usually

near the first part of November. Students are required to wait until the final exam schedule is

posted before making arrangements for travel over the Christmas period. Exams will NOT be

moved to accommodate students who ignore this requirement.

The overall course grade will be calculated as listed below:

Midterm Exam 1 15%

Midterm Exam 2 30%

Final Exam 55%

Non-programmable calculators are allowed on the midterm tests and the final exam. However,

SOA approved calculators are strongly recommended.

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This course, together with AS3424b, forms part of the Exam C exemption under the Canadian Institute of Actuaries "University Accreditation Program". Please refer to the following link for full details: http://www.ciaica.ca/membership/uap/information-for-students.

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or supporting documentation to the Academic Counselling Office of your home faculty as soon as possible. If you are a Science student, the Academic Counselling Office of the Faculty of Science is located in WSC 140, and can be contacted at scibmsac@uwo.ca.

For further information, please consult the university's medical illness policy at http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf.

The policy of the department of Statistical and Actuarial Sciences is that there will be no make-up exams for a missed midterm. For those that do legitimately miss a midterm and provide the required supporting documentation, the standard practice will be that the weight of the midterm will be reassigned to the final exam. If your reason is not deemed valid, then you will receive a mark of 0.

If you miss the Final Exam, please contact your faculty's Academic Counselling Office as soon as you are able to do so. They will assess your eligibility to write the Special Exam (the name given by the university to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (see http://www.registrar.uwo.ca/examinations/exam_schedule.html).

The policy on Accommodation for Students with Disabilities can be found here: www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_disabilities.pdf

The policy on Accommodation for Religious Holidays can be found here: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf

Learning-skills counsellors at the Student Development Centre (http://www.sdc.uwo.ca) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year