ACTUARIAL SCIENCE 651

ACTUARIAL MATHEMATICS II

SPRING, 2011

Instructor: E. W. (Jed) Frees, 4112 Grainger Hall, 262-0429
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Office Hours: T 3:45-4:30, W 2:30-3:30 pm and by appointment

I am in my office more frequently than these hours might suggest. Please feel free to visit in the afternoons whenever you find me in the office. I urge you to make an appointment to see me if you have something important to discuss and you find these times inconvenient.

Required Readings

Actuarial Mathematics, Bowers, Gerber, Hickman, Jones and Nesbitt, Second Edition, Society of Actuaries, 1997. The errata link is available on the courseweb. Also, a revised printing of Section 8.5 is available on the courseweb.

Multi-State Transition Models with Actuarial Applications, by J.W. Daniel. Available on the courseweb.

Poisson Processes and (mixture distributions), by J.W. Daniel. Available on the courseweb.

Recommended Readings: Exam MLC Question and Answer Bank, BPP Professional Education – available at the Grainger copy center. If you are taking exam MLC in the near future, I recommend looking over problems from this source.

Important Dates

Item	Date	% Grade
Midterm #1	Feb 11	20
Midterm #2	Mar 8	20
Midterm #3	Apr 8	20
MLC	Wed, May 11	
Final	Sunday, May 8 (7:45 am)	25

Quizzes and Computer Assignments will account for the remaining 15% of the Grade.

Course Philosophy

The exams (described below) will be based on problems. Most of the course will be geared to helping you work through the problems. The lecture will be devoted to explaining the key concepts of the material and working illustrative examples. You will work problems for the Quizzes and Computer Assignments (described below). You will also have a lot of sample problems to work through.

Academic Integrity

You are responsible for maintaining the highest standards of honesty and integrity in every phase of your academic career. The penalties for academic dishonesty are severe and ignorance is **not** an acceptable defense. All students must abide by the code of academic honesty of the University of Wisconsin – Madison which is available from the *Office of the Dean of Students* or the following website: http://www.wisc.edu/students/saja/misconduct/academic_misconduct.html. You are responsible for informing yourself about these standards before performing any academic work. It is my responsibility to uphold the University's academic honest policy and report my suspicions of dishonesty to the *Office of the Dean of Students*.

Examinations

The midterm examinations (in class) are not cumulative, although there is some overlap in coverage from exam to exam. I will announce the examination topics one week before the examination. All examinations will be closed book, closed notes, with the exception that you are allowed one (1) 8-1/2" x 11" sheets (both sides) of notes. I expect everyone to have a small electronic calculator, having at least one memory and capable of taking a logarithm, exponential and square roots, for use in all exams. The final exam is cumulative, but with a heavy emphasis on the most recent material.

Please do not miss an exam. If you should miss a midterm exam because of a University approved excuse (e.g. written medical excuse), your final exam score will be used as the score for the missed exam.

Quizzes

Quiz on Thursdays except for examination weeks. I will give no make-ups for the quizzes. Quizzes are closed-book, closed note.

Each weekly quiz will consist of one problem taken directly from the homework or text examples assigned during the previous week with at most some numbers changed. I will give you the quiz during the first ten minutes of class. I will drop the lowest quiz scores and half of the second lowest.

Attendance

Lecture attendance is **strongly** advised. Exams will be based primarily on material covered in class. Should you miss class for any reason, it is your responsibility to obtain lecture notes from another student.

Computer Assignments

I will assign three Excel projects to be done during the term – these will be done individually. Please turn in hard copies during class for these assignments – no email. A larger project will be done at the end of the term - this will be done in groups.

Course Web page

A course web page has been established as a means for me to efficiently administer this class. The web page allows you to obtain a copy of the syllabus, obtain lecture notes, link to other important web pages, and so forth. You are responsible for accessing the course web page on a regular basis. You may log on to the web page through the following address: http://courses.bus.wisc.edu.

Grading

If you get 90 percent out of the total available points, then you are guaranteed an AB. Similarly, lower bounds for BC, C, and D final grades will be no higher than 80, 70, and 60 percent of the total available points, respectively. All other grades (A, B and F) will be determined at the end of the semester based upon the performance of the class. Grades will be curved if necessary.

Special Needs

Any student who feels that he or she may need an accommodation for a disability of any sort should consult with me as soon as possible so that appropriate arrangements may be made.

CLASS SCHEDULE

Number of 75 minute Lectures	Reference and Topic	Reference
5	Chapter 9 – Multiple Life Functions	*Actuarial Mathematics* (9.1–9.5, 9.6.1, 9.7, 9.9)
5	Chapter 7 – Benefit Reserves	*Actuarial Mathematics* (7.1, excluding utility-theory approach), 7.2-7.6)
2	Chapter 8 –Analysis of Benefit Reserves	*Actuarial Mathematics* (8.1–8.4). Handout (new 8.5)
4	Chapter 10 – Multiple Decrement Models	*Actuarial Mathematics* (10.1–10.4, 10.5–10.5.1, 10.5.4, 10.6)
2	Chapter 11 – Applications of Multiple Decrement Theory	*Actuarial Mathematics* (11.1-11.3)
3	Chapter 15 – Insurance Models including Expenses	*Actuarial Mathematics* (15.1–15.2.1, 15.4, 15.6–15.6.1)
3	Multi-State Transition Models	Handout
3	Poisson Processes and Mixture Distributions	Handout
27	Total	

Frees – AS 651 – Actuarial Mathematics 2, Spring, 2011

Welcome to *Actuarial Mathematics 2*! I can give a better course if you would please tell me a little about yourself.

Name _____.

Name that we can use in class_____.

Semester/Year Entered UW-Madison_____.

Hometown:

Hobbies/Sports?:

Comfort Level with Excel

☐ No/minimal experience ☐ Comfortable ☐ Extensive experience

Prior/Concurrent Math Courses (Check if you have taken, or are taking, these courses):

☐ Math 222 ☐ Math 234

Prior/Concurrent Probability/Statistics Courses (Check if you have taken these courses):

☐ Math 431 ☐ Stat 309 ☐ Stat 310 ☐ Stat 311 ☐ Stat 312

Prior/Concurrent Actuarial Science Courses

☐ AS/Math 303 ☐ AS 300 ☐ AS 301 ☐ AS 650 ☐ AS 652 ☐ AS 654

Please list other math/stat/actuarial science courses that you have taken (or are taking this semester):

Passed any actuarial exams? Please list!

This Spring, I intend to take SoA/CAS Exam:_____.

Please list topics not understood by you that were covered in AS 650.