

**Instructor:** Dr. Min-Ming Wen

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**Office Hours:** T Th 2:15-3:30 pm OR by appointment

**Textbook:** *Mathematical Statistics with Applications*, 7<sup>th</sup> Edition by Miller and Miller.

**Reference Book:** Risk Management and Insurance, 2<sup>nd</sup> edition by Scott E Harrington, Scott Harrington, and Gregory Niehaus

### Quizzes & Exams:

With a total of 500 points possible, the cut-off points for the letter grades A, B, C, and D will be 450, 400, 350, and 300 points, respectively.

Quizzes: Total points, 150: Tentatively, four to seven quizzes are expected.

Exams: Total points, 350: Three in-class comprehensive exams:

Exam 1, 100 points; Exam 2, 100 points; Exam 3, 150 points;

(Tentative schedules: Exam 1: the week of Feb. 12, Exam 2: the week of Mar 20, Exam 3: the week of Apr 29)

Exam 3 is tentatively scheduled on Apr. 29 and the class of May 1 is planned to discuss the questions of Exam 3 and other past SoA exam questions before you sit for the actuarial exam scheduled in May.

([http://www.beanactuary.org/exams/prob\\_exam.cfm](http://www.beanactuary.org/exams/prob_exam.cfm))

The Quizzes and Exams will cover the materials discussed in classes and the past SoA actuarial Exam/P questions (reference website: <http://www.soa.org/files/pdf/edu-2008-spring-p-ques.pdf>).

### Outline of Topics:

- Combinatorial Principles - Permutations and Combinations (Chapter 1)
- Sample Spaces and Events (Chapter 2)
- Probability (Chapter 2)
- Conditional Probability and Independence of Events (Chapter 2)
- Random Variables and Probability Distributions (Chapter 3)
- Expectation and Other Distribution Parameters (Chapter 4)
- Frequently Used Discrete Distributions (Chapter 5)
  - Frequently Used Continuous Distributions (Chapter 6)
  - Risk Management and Insurance (if time allows, we will get into some applied topics in the reference book)
    - Introduction to Risk
    - Risk Measurement and Risk Pooling
- Joint, Marginal and Conditional Distributions (Chapter 7)
- Functions and Transformations of Random Variables (Chapter 8)

### Course Regulations:

1. One of the objectives of this class is to prepare you for sitting for the SoA Actuarial Exams. It is the intent of this class to cover as many materials as possible before you take the SoA exam scheduled in May. If your study advances our lectures, you are welcome to come to my office to discuss the questions you will be working on.
2. Please note that because of the quick pace of this course, we may not be able to go through each question in details. You should work on as many questions as possible for practice.

3. Quizzes and Exams will be given during lectures on the most recent covered topics and chapters. Most of the cases, we will have quizzes after we finish a chapter. The numerical examples illustrated in textbook or in class are good references for preparing quizzes (exams). It is strongly recommended that you work on the exercises appeared in the end of each section. The quiz schedule will be announced as it is needed. **NO MAKE-UP QUIZZES WILL BE GIVEN FOR ANY REASON.** The Quizzes and Exams will cover the materials discussed in classes and the past SoA actuarial Exam/P questions (reference website: <http://www.soa.org/files/pdf/edu-2008-spring-p-ques.pdf>).
4. Attendance: There is no mandatory attendance requirement for this class. Please note, however, that if you frequently miss class the instructor reserves the right to deny office hour privileges to you. Further, it is your responsibility to be sure that you get the notes and announcements, if any, from a student in the class. My notes will not be available to students.
5. You will take all the Exams during regular class time. The dates for the exams will be announced in lectures.
6. All exams are closed book. You may use a hand-held calculator at exams except for the ones excluded. Sharing of calculators is prohibited. No formula sheets will be allowed in taking the quizzes and exams. Approved Calculators: You may use a hand-held calculator at exams, while the followings approved and allowed at CAS/SoA exams are recommended in order to make yourself familiar with the use of the calculator: Texas Instruments BA-35 model calculator, BA II Plus, BA II Plus Professional Edition, TI-30X, TI-30Xa, or TI-30X II (IIS solar or IIB battery). The SoA set up the regulations of Calculator use as follows: "You may use more than one of the approved models during the examinations. Upon entrance to the examination room, candidates must show the supervisor that the memory has been cleared for all of the calculators brought in. Calculator instructions are not allowed in the exam room. For the BA II Plus and the BA II Plus Professional Edition, clearing will reset the calculator to the factory default settings."
7. You are generally quite welcome to visit me at my office if you have questions. The only time this invitation is not extended is the day of exams. Do not come to my office to ask questions the day of an exam.
8. Make-up exams will not be given. If there is a serious medical problem, which prevents you from taking an exam, or if there is a death in the immediate family, contact me as soon as possible. In such a case where missing an exam is warranted, your exam 3 will be worth 250 points instead of the usual 150. The remaining aspects of your grade will be computed as outlined above.
9. The instructor reserves the right to amend the syllabus. Changes will be announced in lecture.
- 10. Cell Phones, beepers and buzzers are to be muted or turned off during lectures and examinations.**
11. Please note that mistakes in your grades on quizzes and/or exams may occur. You have one week from the time the paper was handed back to notify me of the mistake. If you wait longer than the one week, no change will be made to the grade.
12. Due to privacy concerns, I will not discuss grades using email or the telephone. You must meet with me in person to discuss your grades.
13. All university regulations regarding academic misconduct will be followed in this class. Evidence of academic misconduct will be forwarded to the Northern Illinois University judicial system and may result in a failing grade for the course or expulsion from the university.
14. This university abides by Section 504 of the Rehabilitation Act of 1973, which stipulates that no student shall be denied the benefits of an education solely by reason of handicap. If you have a disability that may have some impact on your work in this class and for which you may require accommodations, please see me and the staff at the Center for Access-Ability Resources (CAAR) located at the Health Services Building so that accommodations may be arranged.