

# 22S:181 Spring - 2007

Course policies are governed by the College of Liberal Arts and Sciences. Please visit the url, [http://www.clas.uiowa.edu/students/academic\\_handbook/](http://www.clas.uiowa.edu/students/academic_handbook/) in order to get familiar with the following;

- i. University policies regarding student rights and responsibilities
- ii. University policies regarding academic misconduct

Please visit <http://www.stat.uiowa.edu/courses/tutors.shtml> for a list of independent tutors.

## Special Arrangements:

I would like to hear from anyone who has a disability which may require some modification of seating, testing, or other class requirements so that appropriate arrangements may be made. Please see me about this as soon as possible.

## Instructor:

Nariankadu D. **Shyamalkumar** (i.e. call me Shyamal pronounced shá mul !)  
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EMail: [shyamal-kumar@uiowa.edu](mailto:shyamal-kumar@uiowa.edu)  
Classes: 12:30pm - 1:20pm MWF - 112 MH  
Office Hours: 14:30 to 16:00 MF or by appointment.  
Website: ICON at the url <http://icon.uiowa.edu>

## Department:

Statistics and Actuarial Science, 241 SH, 335-0712.  
Chair - L. Tierney, [luke-tierney@uiowa.edu](mailto:luke-tierney@uiowa.edu), 335-0712

## Text, Recommended Reading & Miscellany:

**Bowers, et. al.** *Actuarial Mathematics, 2nd Edition SoA*

This is an official text of the SOA for the material that we shall cover in this course. Particularly notable is the extensive set of exercises provided at the end of each chapter. An errata for this book is available on the SOA website. Available from the SOA for \$95.

**Gerber, H. U. *Life Insurance Mathematics*, 3rd Edition Springer Verlag**

This is both concise in its choice of topics as well as terse in its explanations. A mathematically mature student might want to give it a quick read. It has some elegant *material* not included in the text and hence not included in SOA exam 3. Good set of exercises with solutions at the end. Available in the library.

**Atkison, D. B. & Dallas, J. W. *Life Insurance Products & Finance*, SOA**

This is a wonderful book to read. Moreover, it is co-authored by an Iowa alumnus which might make it for some a **MUST** read. Available from the SOA for \$85.

**Jordan, C. W. *Life Contingencies*, Second Edition, SOA**

Most actuaries who graduated before the publication of the text used this book. Available in the library and for \$50 from the SOA.

**Problem Sets**

The url, <http://www.soa.org/STATIC/examinations.html>, contains SOA exam papers after year 2000. Those before year 2000 can be purchased from the Copy Center, Room C102, Pappajohn Building (College of Business). Ask for the manual of a particular section of 22S:188. For example, if you want the old exam papers on compound interest, ask the manual for 22S:188 Section 140. Below is a list of five manuals and the topics they cover.

- 22S:188 Section 100 Mathematics (useful for preparing Exam 1)
- 22S:188 Section 110 Probability and Statistics (useful for Exam 1, 22S:130, 131, 153, 154)
- 22S:188 Section 140 Mathematics of Finance (useful for 22S:180)
- 22S:188 Section 150 Life Contingencies (useful for 22S:181 and 182)
- 22S:188 Section 151 Risk Theory (useful for 22S:175)

**Syllabus:**

The syllabus will be described using the text. The list of sections below forms a core of the syllabus with limited digressions at some points along the course, time permitting.

**Pre-requisite from 174**

We will assume the knowledge of Chapter 3 of the text.

### Pre-requisite from 180

The material covered in Chapters 1-4 excluding sections 3.6,3.7,3.8,3.10 and 4.8 of the book by Kellison, S. G. titled *The Theory of Interest*. The chapter and section numbers refer to the second edition.

### Contents of this course

Chapter 4: Sections 4.1-4.4

Chapter 5: Sections 5.1-5.4

Chapter 6: Sections 6.1 (excluding utility-theory approach), 6.2-6.4

Chapter 7: Sections 7.1(excluding utility-theory approach), 7.2-7.6

We may cover, time permitting, parts of Chapter 8, especially sections 8.1-8.4

### Evaluation System:

#### Homework: 10%

Solutions to assignments will be posted on the course web site. I will choose an unannounced subset of problems to be graded with the assumption that you will be responsible enough to confirm the correctness of your ungraded solutions (especially those in doubt) by comparing it with the published one or by getting it checked by me during office hours.

#### Exams

Only official SOA/CAS calculators will be allowed. Check the latest SOA regulations on them at their web site.

Mid-terms and the final will be closed-book. They will consist of **short answer type** problems. One may find the past SOA exam problems from the relevant material useful in preparing for them.

- i. Mid-Term 1 - Monday, the 26th of February (in-class) - 25%
- ii. Mid-Term 2 - Friday, the 30th of March (in-class) - 25%
- iii. Final - Monday, 7th of May at 7:30am - 40%

#### Grading

Undergraduate and graduate students will be treated as two separate groups when it comes to assigning final grades. **Attendance may also affect your grade.**