

Math 416B Actuarial Problems III

Spring 2012

9:00 – 9:50 MW Bouillon 101

Instructor: Dr. Cen-Tsong Lin

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Office Hours: 10:00 – 10:50 Monday – Thursday; 9:00 – 10:00 Friday or by appointment.

Course Goals: Helping actuarial science students studying and pass exam FM/2. We will review the interest theory and financial economics topics that are important in actuarial science and study efficient ways of solving problems that might appear on Exam FM/2 which is administrated by Preliminary Actuarial Examinations/SOA.

Prerequisite: Math 418B, I assume students are concurrently enrolled in Math 418C

Required Text: Matthew J. Hassett, Michael I. Ratliff, Amy C. Steeby, Toni C. Garcia, *ACTEX FM/2 Study Manual, Fall 2011 Edition*, ACTEX Publications

Calculator: A **BA II Plus** calculator is recommended for writing SOA exams.

Tentative Schedule:

Week 1	March 29	Introduction
Week 2	April 2 and 4	Module 1: Time Value of Money, Module 2: Annuities
Week 3	April 9 and 11	Module 2: Annuities, Module 3: Loans
Week 4	April 16 and 18	Module 3: Loans, Module 4: Bonds
Week 5	April 23 and 25	Module 4: Bonds , Midterm
Week 6	April 20 and May 2	Module 5: Yield rate, Module 6: Term Structure of Interest rates
Week 7	May 7 and 9	Module 7: Asset Liability Management, Duration and Immunization
Week 8	May 14 and 16	Module 8: General Derivatives, Module 9: Options
Week 9	May 21 and 23	Module 10: Investment Strategies, Module 11: Hedging
Week 10	May 30	Module 12: Forwards and Futures, Module 14: Swaps

Evaluation:

- Homework assignments 50%
- Midterm 20%, Wednesday, April 25
- Comprehensive final exam 30%, Thursday , June 7, 8:00 – 10:00 AM

Homework: Homework assignment will be given in each meeting and is due one week after it is assigned.

Midterm: 8 multiple-choice questions

Final Exam: 20 multiple-choice questions

Exam FM/2 Information:

- The Financial Mathematics exam is called Exam FM by the SOA and Exam 2 by the CAS. This three-hour exam consists of 35 multiple-choice questions. The examination is administered by Preliminary Actuarial Examinations/SOA. The examination is jointly sponsored and administered by the CAS, SOA, and the Canadian Institute of Actuaries (CIA). The examination is also jointly sponsored by the American Academy of Actuaries (AAA) and the Conference of Consulting Actuaries (CCA).

- The Learning Objectives of Exam FM/2 is available from the website of **Ba An Actuary** (<http://www.beanactuary.org/exams/preliminary/exams/syllabi/2012-06-exam-fm.pdf>)

I. Interest Theory (65-80%)

- A. Time Value of Money (5-15%)
- B. Annuities with payments that are not contingent (5-20%)
- C. Loans (5-20%)
- D. Bonds (5-20%)
- E. General Cash Flows and Portfolios (5-20%)
- F. Immunization (5-15%)

II. Financial Economics (20-35%)

- A. General Derivatives (0-5%)
- B. Options (5-10%)
- C. Hedging and Investment Strategies (5-15%)
- D. Forwards and Futures (0-10%)
- E. Swaps (0-5%)

- Date and deadlines:

<u>Administration</u>	<u>Registration Deadlines</u>	<u>CBT Dates</u>
June 2012	April 23	June 4-14
August 2012	June 27	August 8-18
October 2012	August 27	October 8-18
December 2012	October 22	December 3-13

- Fees: \$200.00