Math 5620 and Math 2620-002

Spring 2010
Course Syllabus

Class Times: Tuesdays and Thursdays, 5:00 – 6:15 pm
Location: MSB 215

Goal: **Financial Mathematics I** will address the mathematics used in the theory of interest. Topics will include the measurement of interest, accumulation and discount, present value, annuities, loans, bonds and other securities. In addition, this course is intended to help graduate students gain a deeper appreciation of the financial services industry and the work of actuaries in P&C, life and health insurance.

Learning Objectives:

Terminology and concepts including the following:

- Real, nominal, effective and equivalent rates of interest under simple and compound interest models
- Term structure of interest, including spot rates and forward rates
- Measures of return on investment under dollar-weighted and time-weighted methods
- Selected economic drivers of interest rates
- Major trends in the evolution of insurance, annuity and investment products

Key procedures and methods including the following:

- Calculating present values and accumulated values
- Solving equations of value
- Valuation of annuities and bonds
- Loan repayment schedules
- Additional concepts applicable to fixed income investments

Instructional Practice: Math 5620 is a graduate level course. Differentiated instruction will be used in the event that undergraduates are enrolled in the class. Consistent with this differentiated approach, graduate students will be expected to complete assignments containing enriched material and may be given tested on their mastery of these concepts.

Textbook: *Mathematical Interest Theory*, 2007, by James W. Daniel and Leslie J. F. Vaaler. This text is available at the bookstore

References[1]**:** *Theory of Interest (Second Edition),* 1991, by Stephen G. Kellison.

Theory of Interest and Life Contingencies, with Pension Applications, 1988, by Michael M. Parmenter

Note 1: Students are not expected to purchase these references.

Grading Plan:

Component	Estimated Weight
In-class progress checks (10 minutes max.) that aggregate to a fourth quiz grade	16
Three in-class quizzes	57
Comprehensive final exam	27

Historically, it has been difficult to re-schedule missed quizzes. Please warn me ahead of time if you will miss an assessment.

In past classes, adjustments have been made to the grading plan. Any changes will be discussed with the class.

Scheduling Note

For each class I will be traveling to UCONN from downtown Hartford. Traffic can be gridlocked in Hartford, and my arrival may also be impacted by weather conditions. I will call ahead and post a message on Twitter (username: iamsmythe) to pass the word if I anticipate arriving late for class. Thanks in advance for your understanding if a difficult commute delays my arrival.

Contact Info: Office hours will commence approximately one half hour prior to each class in MSB 127. I will also provide extra office hours at pre-announced times on weekends.

I can also be contacted via phone and e-mail.

Office: 860-299-2403
Cell: 860-604-0846

E-mail: gregsmith@math.uconn.edu

Back-up e-mail: greg_smith@conning.com