

MATH 1122  
Actuarial Mathematics 3  
Lecture: Tues & Thurs 4 – 5:15, Thackeray Hall 704  
Recitation: Tues 5:30 – 6:20, Thackeray Hall 703

**Instructor:** Professor John Chadam  
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**Office Hours:** Tues & Thurs, 3 – 4 or by appointment

**Grading:** Quizzes (15 min, in recitation) – 30%  
Midterm Exam – 30%  
Final Exam – 40%

**Prerequisites:** MATH 0220, 0230, 0470 & STAT 1151

**Philosophy:** To introduce some basic concepts of mathematical modeling in modern finance and to cover the content of Exams MLC (<https://soa.org/Education/Exam-Req/edu-exam-m-detail.aspx>) given by the Society of Actuaries <http://www.soa.org> and Exam3L (<http://www.casact.org/admissions/syllabus/index.cfm?fa=LCsyllabi&parentID=332>) of the Casualty Actuarial Society <http://www.casact.org>. This is the first of a two-semester course (together with MATH 1123 in the spring) covering the MLC material.

**Topics:** Survival Distributions and Life Tables, Life Contingency Models (Life Insurance, Life Annuities, Premiums, Benefit Reserves, Multi-Contingency Models) as well as supplementary material, as necessary, on mathematical topics such as Stochastic Processes, Markov Chains and Statistics.

**Reading Material:** We shall make extensive use of the ASM Study Manual for SOA Exam MLC, 14<sup>th</sup> edition, 3<sup>rd</sup> printing by Abraham Weishaus, 2015. It has good summaries of the material that will be presented in the lectures and a wealth of examples and worked-out exercises. You should have ready access to this manual.

In addition, two supplementary books, the first recommended by the SOA, are:

Dickson, C.M.D., Hardy, M.R., and Waters, H.R., *Actuarial Mathematics for Life Contingent Risks*, Cambridge: Cambridge University Press, 2<sup>nd</sup> edition, 2013: Chapters 1-13 (excluding Sections 10.7 and 11.5). This covers all the material for the SOA MLC exam and will be completed in the two-semester sequence, MATH 1122 – 1123.

I also like:

Cunningham, R.J., Herzog, T.N., and London, R.L., *Models for Quantifying Risks*, Fifth Edition. 2013, and an updated version with the same title by Camilli, Duncan & London, 6<sup>th</sup> edition, 2014.

**Students with Disabilities:** If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Office of Disability Resources and Services, 216 William Pitt Union, 412-648-7890/412-383-7355 (TTY), as early as possible in the term. Disability Resources and Services will verify your disability and determine reasonable accommodations for this course.

**Academic Integrity:** Cheating/plagiarism will not be tolerated. Students suspected of violating the University of Pittsburgh Policy on Academic Integrity, from the February 1974 Senate Committee on Tenure and Academic Freedom reported to the Senate Council, will be required to participate in the outlined procedural process as initiated by the instructor. A minimum sanction of a zero score for the quiz or exam will be imposed.

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