



Actuarial Science 527

Life Contingencies III

Multiple decrement models: time until and causes of death. Associated single decrement tables. Various pension funding cost methods: unit credit, projected unit credit, entry age normal, individual level premium and aggregate. Experience gains and losses: allocating losses to investment, mortality, retirement and salary components.

Course Hours: H(3-1T)

Prerequisite(s): [Mathematics 323](#) and [353](#) and [Actuarial Science 327](#).

Text: "Actuarial Mathematics," Bowers, Gerber, Hickman, Jones, Nesbitt, second edition, Society of Actuaries, 1997.

Syllabus

Topics

Chapter 9 (9.1-9.5, 9.6.1, 9.7, and 9.9): Multiple Life Functions

Chapter 10 (10.1-10.4, 10.5-10.5.1, 10.5.4, 10.6): Multiple Decrement Models

Chapter 11 (11.1-11.3): Applications of Multiple Decrement Theory

Chapter 15 (15.6): Insurance Models Including Expenses

Time permitting, additional material from the chapters listed above and also from Chapter 16 may be included. If Chapter 16 material is included, it should not overlap any Chapter 16 material taught the term before in Actuarial Science 427 (i.e., the instructors should communicate with one another).

It is intended that this course should cover a portion of the syllabus for that part of the professional actuarial examination concerned with Life Contingencies. Currently, this corresponds to most of the material listed above from Chapters 6-9 and 15 that is on the syllabus for the Society of Actuaries Exam M, Life Contingencies Segment (MLC). This course syllabus should be updated as needed, with this objective in mind.

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