MATH 448 / 548
Advanced Actuarial Models (3 Units)

Course Outline

Topics	# of weeks
Policy Values	4.0
Policy values for policies with different frequency of cash flows	
Policy alteration and retrospective policy values	
Deferred acquisition expenses and modified premium reserves	
Multiple State Models	4.0
Multiple state models	
Multiple decrement models	
Joint Life and Last Survivor Models	1.5
Joint life and last survivor benefits	
A multiple state model for joint lives	
Pension Mathematics	0.5
Yield Curves and non-diversifiable Risk	1.0
Valuation of insurance and life annuities	
Diversifiable and non-diversifiable risk	
Emerging Costs for Traditional Life Insurance	1.0
Profit testing	
Participating and Universal Life Insurance	1.0
Universal life insurances	
Profit testing	
Exams	1.0

Textbook: Actuarial Mathematics for Life Contingent Risks, by D.C.M. Dickson, M.R. Hardy, and H.R. Waters

Prerequisite: MATH 438

Note: This course together with its prerequisite Math 438/538 covers the SoA exam MLC