

METU INSTITUTE OF APPLIED MATHEMATICS

Course Title:	LIFE INSURANCE MATHEMATICS		
Course Code:	IAM 582		
Credit:	3(3-0)		
Instructor's Name:	Ömer L. GEBİZLİOĞLU A.Devin SEZER		
Prerequisites:	Consent of the Instructor		
Content:	Theory of compound interest, future lifetimes, life tables, life insurance, annuities and premiums, reserves and expenses, multiple decrements, claim amount modelling, basics of the stochastic modelling for life insurance		
Aims:	Establish a fundamental knowledge of life insurance modelling and insurance fund management, developing skills in life insurance premium and reserve calculations		
Learning Outcomes:	Knowledge and skills in modelling and analysis life insurance contracts, assets and liabilities		
Suggested Textbooks:	[HUG] Gerber, H.U. (1997) LIFE INSURANCE MATHEMATICS, Springer-Verlag [SDP] Promislow, S. D. (2006) FUNDAMENTALS OF ACTUARIAL MATHEMATICS, John Wiley and Sons		
Outline:	Subject	Reading Assignment	Time Schedule
	. Introduction	SDP – Ch.1	Week 1
	. Mathematics of Compound Interest	HUG – Ch.1 SDP – Ch.2	Week 2
	. Future Lifetimes and Life Tables	HUG – Ch.2 SDP – Ch.3	Week 3
	. Life Insurance	HUG – Ch.3 SDP – Ch.4,5	Week 4
	. Life Annuities	HUG – Ch.4 SDP – Ch.4,5	Week 5
	. Premiums	HUG – Ch.5 SDP – Ch.4,5	Week 6
	. Reserves and Expenses	HUG – Ch.6,10 SDP – Ch.6,7,8,12	Week 7-8
	. Multiple Decrement	HUG – Ch.7 SDP – Ch.11	Week 9
	. Multiple Life Insurance	HUG – Ch.8	Week 10
	. Claim Amount Modelling	HUG – Ch.9	Week 11
	. Statistical Inference for Life Insurance Modelling	HUG – Ch.11	Week 12
	. Basic Stochastic Modelling for Life Insurance	SDP – Ch.13,14,15	Week 13-14
Resources:	Suggested textbooks, additional book readings, journal papers, exercises, homework assignments		