

Course title	Life insurance mathematics
Volume (number of credit points)	4
Volume (number of contact hours)	64
Number of lectures	44
Number of practical works	20
Course level: 1-4 – bachelor; 5-6 – master	5-6
Prerequisites	Mathematical analysis, Theory of probability and mathematical statistics
Science field, science sub-field	Mathematics, theory of probability and mathematical statistics
Equivalent course	

COURSE DESIGNER

<i>Name</i>	<i>Surname</i>
Andrejs	Reinfelds

COURSE ABSTRACT

The aim is to give a background in the theory of life insurance mathematics.

RESULTS

Students are responsible for all topics covered by the course “Life insurance mathematics” and are able to obtain license for working in life insurance companies.

REQUIREMENT for AWARDING CREDIT POINTS

Test work and 2 individual home works

Examination – oral exam (2 theoretical questions and example).

COURSE PLAN

<i>No.</i>	<i>Topic</i>	<i>Planned amount in hours</i>
1.	Life tables	6
2.	Select life table	2
3.	Assurances	6
4.	Annuities	6
5.	Bonus system	2
6.	Premiums	4
7.	Reserves	6
8.	Applications of reserves	4
9.	Profit testing	8
10.	Joint life functions	4
11.	Contingent assurances	4
12.	Reversionary annuities	4
13.	Multiple decrement tables	4
14.	Multiple state models	4

LITERATURE

Basic textbooks

1.	W.F.Scott. Life Assurance Mathematics, Institute of Actuaries, London, 1999 (343 p).
2.	H.U.Gerber. Life Insurance Mathematics. Springer-Verlag,1990 (131 p)
3.	N.Bowers, H.Gerber, J.Hickman, D.Jones, S,Nesbitt. Actuarial Mathematics. Society of Actuaries USA, 1986 (625 p)
4.	Formulae and Tables for Actuarial Examinations. Institute of Actuaries. London, 1980 (125 p.)

Further reading

1.	R.Norberg. Financial Mathematics in Life and Pension Insurance. Summer School in Mathematical Finance, Dubrovnik 16-22, September 2001 (117 p)
2.	A.Matvejevs. Dzīvības apdrošināšanas matemātiskie modeļi. Rīga, RTU, 2005 (156 lapp.)

Periodicals, internet resources and other sources

1.	Finansu un kapitāla tirgus komisijas mājas lapa: http://www.fktk.lv
2.	LR Centrālās statistikas pārvaldes mājas lapa: http://www.csb.gov.lv