

Georg-August-Universität Göttingen Module B.Mat.3043: Non-life insurance mathematics	6 C 4 WLH
Learning outcome, core skills: Non-life insurance mathematics deals with models and methods of quantifying risks with both, the occurrence of the loss and its amount showing random patterns. In particular the following problems are to be solved: • determining appropriate insurance premiums; • calculate adequate loss reserves; • determine how to allocate risk between policyholder and insurer resp. insurer and reinsurers. The German Actuarial Association (Deutsche Aktuarvereinigung e. V.) has certified this module as element of the training as an actuary („Aktuar DAV“ / „Aktuarin DAV“, cf. www.aktuar.de). To this end, the course is designed in view of current legislative and regulatory provisions of the Federal Republic of Germany. Learning outcome: The aim of the module is to equip students with knowledge in four areas: 1. risk models; 2. pricing; 3. reserving; 4. risk sharing. After having successfully completed the module, students are familiar with fundamental terms and methods of non-life insurance mathematics. They • are familiar with and able to handle essential definitions and terms within non-life insurance mathematics; • have an overview of the most valuable problem statements of non-life insurance; • understand central aspects of risk theory; • know substantial pricing and reserving methods; • estimate ruin probabilities; • are acquainted with most important reinsurance forms and reinsurance pricing methods. Core skills: After having successfully completed the module, students have acquired fundamental competencies within non-life insurance. They are able to • evaluate and quantify fundamental risks; • model the aggregate loss with individual or collective model; • apply a basic inventory of solving approaches; • analyse and develop pricing models which mathematically are state of the art; • apply different reserving methods and calculate outstanding losses; • assess reinsurance contracts.	Workload: Attendance time: 56 h Self-study time: 124 h
Course: Lecture course with exercise session	4 WLH

Examination: Written examination (120 minutes)		6 C
Examination requirements: Fundamental knowledge of non-life insurance mathematics		
Admission requirements: none	Recommended previous knowledge: B.Mat.1400	
Language: English	Person responsible for module: Programme coordinator	
Course frequency: not specified	Duration: 1 semester[s]	
Number of repeat examinations permitted: twice	Recommended semester: Bachelor: 4 - 6; Master: 1 - 4	
Maximum number of students: not limited		
Additional notes and regulations: Instructor: External lecturers at the Institute of Mathematical Stochastics Accreditation: By the German Actuarial Association (Deutsche Aktuarvereinigung e. V.), valid until winter semester 2017/18		