

Course Descriptions Master 2023-2024

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|---|--|-----------|-----------|-------------------|-----|-----|-----|-----|
| Course Title | Topics in Computational Actuarial Methods | | | | | | | |
| Course Code | EBS4020 | | | | | | | |
| ECTS Credits | 4,0 | | | | | | | |
| Assessment | Pass / Fail | | | | | | | |
| Period | Period | Start | End | Mon | Tue | Wed | Thu | Fri |
| | 3 | 15-1-2024 | 26-1-2024 | | | | | |
| Level | Advanced | | | | | | | |
| Coordinator | Stephan Smeekes, Marc Schröder For more information:s.smeekes@maastrichtuniversity.nl; m.schroder@maastrichtuniversity.nl | | | | | | | |
| Language of instruction | English | | | | | | | |
| Goals | To provide an understanding of mathematical models useful in actuarial science and their implementation. | | | | | | | |
| Description | The goal of the course is to become familiar with computer based methods useful in actuarial science and financial engineering. The focus of the course will be on Monte Carlo Methods and the Bootstrap. After a general introduction to Monte Carlo Methods we will study variance reducing techniques such as importance sampling and control variates in more detail. To see how these techniques work in practice we will discuss how they can be used in actuarial applications like the calculation of risk measures. Similar, we will first give a general introduction to the Bootstrap. Next, we apply the Bootstrap to actuarial problems like estimation of Value-at-Risk or constructing confidence intervals for the number of claims made per year. | | | | | | | |
| Literature | Research articles and slides of the course. | | | | | | | |
| Prerequisites | This course is in transition. The following rule applies to master Econometrics and Operations Research students who started the programme prior to academic year 2023/24. TRANSITIONAL REGULATION (EBS4020): Students who started the MSc E&OR prior to September 2023, who did not successfully complete one of the following skills courses before September 2023 will have to successfully complete the replacement skills training Computational Research Skills (EBS4043) as from academic year 2023-2024 or have a resit examination in 2023-2024. See the Transitional Regulations section in the Master Education and Examination Regulations for more information. | | | | | | | |
| Teaching methods | PBL / Lecture / Groupwork | | | | | | | |
| Assessment methods | Final Paper / Participation | | | | | | | |
| Evaluation in previous academic year | For the complete evaluation of this course please click http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM | | | | | | | |
| This course belongs to the following programme / specialisation | Transitional Regulations | | | See prerequisites | | | | |