# Course Descriptions None 2020-2021

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| Course Title | Life Insurance II |
| Course Code | EBC4120 |
| ECTS Credits | 6,5 |
| Assessment | Whole/Half Grades |

Period

| Period | Start | End | Mon | Tue | Wed | Thu | Fri |
|---|---|---|---|---|---|---|---|
| 5 | 12-4-2021 | 28-5-2021 | X | | | X | |

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| Level | Advanced |
| Coordinator | Jan Christopher Kops For more information:j.kops@maastrichtuniversity.nl |
| Language of instruction | English |
| Goals | To become acquainted with statistical models that can be used in life insurance. |
| Description | PLEASE NOTE THAT THE INFORMATION ABOUT THE TEACHING AND ASSESSMENT METHOD(S) USED IN THIS COURSE IS WITH RESERVATION. THE INFORMATION PROVIDED HERE IS BASED ON THE COURSE SETUP PRIOR TO THE CORONAVIRUS CRISIS. AS A CONSEQUENCE OF THE CRISIS, COURSE COORDINATORS MAY BE FORCED TO CHANGE THE TEACHING AND ASSESSMENT METHODS USED. THE MOST UP-TO-DATE INFORMATION ABOUT THE TEACHING/ASSESSMENT METHOD(S) WILL BE AVAILABLE IN THE COURSE SYLLABUS. The course provides students with statistical models that are useful in life insurance (many of these models are also used in other fields that are concerned with future lifetimes of individuals or groups such as biostatistics, epidemiology or public health planning). We first discuss methods to model mortality rates for a larger group or an entire population. A particular focus is on the Lee-Carter model and its extensions. We also learn how to estimate these models. Afterwards we turn to models that are appropriate to model the future lifetime of individuals. A focus will be on models that can incorporate covariates such as parametric regression models, the Cox model and the accelerated failure time model. We also address the multiple decrement model. Subsequently, we discuss how these models can be used to set premiums for life insurance products. In the last part of the course we introduce a model that allows to calculate premiums for insurances that may provide benefits depending on the current status of the insured. As part of the course students will also apply the methods introduced to real data. |
| Literature | Research articles, the slides of the course. |
| Prerequisites | Probability Theory and Mathematical Statistics. |
| Teaching methods | PBL / Presentation / Lecture / Assignment |
| Assessment methods | Final Paper / Participation / Written Exam |
| 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

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| Master Econometrics and Operations Research | E&OR Electives |
| SBE Exchange Master | Master Exchange Courses |
| SBE Non Degree Courses | Master Courses |