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|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------------------|----------------------|---------------------------|
| <b>Module Name</b><br>Statistics         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                     |                                     |                      |                           |
| <b>Type of Module</b><br>Advanced Module |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                     | <b>Module Code</b><br>AM-Statistics |                      |                           |
| <b>Identification Number</b>             | <b>Workload</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Credit Points</b> | <b>Term</b>         | <b>Offered Every</b>                | <b>Start</b>         | <b>Duration</b>           |
| MSc-M-Statistik                          | 180 Hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 6 CP                 | 1. – 3. Semester    | variable                            | Both possible        | 1 Semester                |
| <b>1</b>                                 | <b>Course Types</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      | <b>Contact Time</b> |                                     | <b>Private Study</b> | <b>Planned Group Size</b> |
|                                          | a) Lecture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                      | 30 h                |                                     | 60 h                 | 30 students               |
|                                          | b) Exercise                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      | 30 h                |                                     | 60 h                 |                           |
| <b>2</b>                                 | <b>Module Objectives and Skills to be Acquired</b><br>Students should, upon successful completion, have the ability to examine data using common statistical methods and critically evaluate new statistical methods for examining data.                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                     |                                     |                      |                           |
| <b>3</b>                                 | <b>Module Content</b><br>Basic principles of inferential statistics: estimation, testing, confidence intervals, regression; selected parametric and nonparametric methods; basic principles of statistical decision theory; Monte Carlo simulation.                                                                                                                                                                                                                                                                                                                                                                                            |                      |                     |                                     |                      |                           |
| <b>4</b>                                 | <b>Teaching Methods</b><br>Lecture, Exercise                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                     |                                     |                      |                           |
| <b>5</b>                                 | <b>Prerequisites (for the Module)</b><br>Formally: None<br>Regarding the contents: Contents corresponding to the module "Introduction to Stochastics".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                     |                                     |                      |                           |
| <b>6</b>                                 | <b>Type of Examination</b><br>Written exam or oral exam                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                     |                                     |                      |                           |
| <b>7</b>                                 | <b>Credits Awarded</b><br>The module is passed and the credit points are awarded if the 120-180 - minute final exam is passed or the 30-45 - minute oral final exam is passed. Admission requirement for the examination is the regular successful completion of the exercise tasks. The exact requirements will be announced by the respective lecturer at the beginning of the course. Registration is required to take the final examination; a repeat examination will be offered in due course. Repeated participation in the lecture and exercises in preparation for a retake of the final exam is possible. The module will be graded. |                      |                     |                                     |                      |                           |
| <b>8</b>                                 | <b>Compatibility with other Curricula</b><br>The module can be used in the masters programs in mathematics, business mathematics and computer science.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                     |                                     |                      |                           |
| <b>9</b>                                 | <b>Proportion of Final Grade</b><br>9/114                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                     |                                     |                      |                           |
| <b>10</b>                                | <b>Module Coordinator</b><br>Prof. Dr. Peter Mörters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                     |                                     |                      |                           |

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Further Information