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| Georg-August-Universität Göttingen | | 3 C |
| Module M.WIWI-WB.0001: Scientific Programming | | 1 WLH |
| Learning outcome, core skills: The students: <ul style="list-style-type: none"> • know the basic structure and operations of the programming environment MATLAB as well as the most important methods for programming with matrices, • learn the basic concepts and ways of thinking in scientific programming, • learn how to efficiently make use of advanced development tools such as the debugger and the profiler, • are able to visualize problems and create professional graphics, • are able to independently solve problems in MATLAB by their own programming – for example as part of a scientific paper. | | Workload: Attendance time: 18 h Self-study time: 72 h |
| Course: M.WIWI-WB.0001.C Scientific Programming (Computer Exercise) <i>Contents:</i> The practical computer course provides a fundamental introduction to scientific programming with the statistical software “MathWorks MATLAB”. Using the Basic programming language is a great way to teach the essential concepts of programming and numerical data processing, and it allows students to acquire skills required in quantitative sciences. Modern lecture slides available in German and English languages, which include practical exercises, are used. By using the course material, the participants will be motivated to focus on the concepts, and they will be able to track their own progress during the course. <i>Topics</i> <ol style="list-style-type: none"> 1. Graphical User Interface 2. Data and Operations 3. Functions 4. Programming Concepts 5. Development Tools 6. 2D- und 3D-Graphics 7. Advanced Solving Algorithms | | 1 WLH |
| Examination: Written examination (60 minutes) M.WIWI-WB.0001.Mp: Scientific Programming | | 3 C |
| Examination requirements: Knowledge of the usage and functionality of MathWorks MATLAB. Application of MATLAB’s built-in operations and functions. Knowledge of importing, processing and statistical analysis of data. Solving short – even graphical – programming tasks. Knowledge of programming concepts such as loops and branches. Knowledge of a “good programming style”. | | |
| Admission requirements: none | Recommended previous knowledge: Basic knowledge in statistics and mathematics | |
| Language: | Person responsible for module: | |

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| English | Prof. Dr. Helmut Herwartz |
| Course frequency: each semester | Duration: 1 semester[s] |
| Number of repeat examinations permitted: twice | Recommended semester: 1 - 2 |
| Maximum number of students: 25 | |