| Georg-August-Universität Göttingen<br><br>**Module M.WIWI-QMW.0034: Python for Econometrics** | 6 C<br>2 WLH |
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| **Learning outcome, core skills:**<br>Students learn how to work with Python, one of the most powerful and versatile programming languages, and its efficient use in the field of numerical programming applied to economics. After their successful participation they have gained sufficient knowledge to understand Python-based statistical programs and carry out independent data analysis on their own by using Python. The participants also obtain a profound understanding of the critical evaluation of code pieces and a starting point for further in-depth studies in the field of applied data science. | **Workload:**<br>Attendance time:<br>28 h<br>Self-study time:<br>152 h |
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| **Course:** M.WIWI-QMW.0034.Lec **Python for Econometrics** (Lecture)<br>*Contents*:<br>In recent years, Python has established itself alongside R at the forefront of numerical programming languages. Very similar to the programming with MATLAB, mathematical-statistical representations from technical literature, such as econometric textbooks, can be implemented compactly and easily in the programming language Python and its scientific extensions. Following a concise introduction to the general-purpose language framework, the students learn how to design, implement and exchange their own data analysis projects in an object-oriented way:<br><br>1. Introduction to Python and object orientation.<br>2. Numerical programming - compared to MATLAB and R.<br>3. Data formats, handling, exports and imports - file and web.<br>4. Statistical analysis with applications in economics.<br>5. Visual illustrations and presentation of scientific results.<br><br>The participants get familiar with Python's way of thinking and learn how to solve (scientific) programming problems with a state-of-the-art tool. | 2 WLH |
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| **Examination: Written examination (90 minutes)**<br>M.WIWI-QMW.0034.Mp: Python for Econometrics | 6 C |

| **Examination requirements:**<br>The participants are expected to answer question sets about the programming language Python, about data analysis with Python and to demonstrate their knowledge on the basis of practical tasks. | |
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| **Admission requirements:**<br>none | **Recommended previous knowledge:**<br>Scientific Programming, Statistical Programming with R or equivalent. |
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| **Language:**<br>English | **Person responsible for module:**<br>Prof. Dr. Helmut Herwartz |
| **Course frequency:** | **Duration:** |

| each semester | 1 semester[s] |
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| **Number of repeat examinations permitted:**<br>twice | **Recommended semester:**<br>2 - 3 |
| **Maximum number of students:**<br>not limited | |