

## Master of Science in Statistics – Joint Masters Program in Berlin

This is a non-official visualization of the study regulations, specialization areas and modules for the Master of Science in Statistics (study and examination regulations 2016 including the first and second amendment 2020/21). Legally binding are only the study and examination regulations published in the official gazette of the Humboldt-Universität zu Berlin!

| Compulsory area<br>(62 LP) | One course must be selected from each module |   |  |  |  |
|----------------------------|--|---|--|--|--|
|                            | Module 1                                     | Module 2                                  | Module 3   | Module 4   | Module 5   |
|                            | Stochastik I<br>HU-Math   10   1             | Econometric Methods<br>HU-WiWi   10   2.1 | Multivariate Statistical Analysis<br>HU-WiWi   6   3.1<br>Methoden der Statistik<br>HU-Math   10   2.2 | Advanced Econometrics<br>HU-WiWi   6   4.1<br>Multivariate Verfahren<br>FU   6   3.2 | Abschlußmodul<br>(Master thesis)<br>  30   5   |
|                            |  |   |  |  | Please note that all modules with a German title will be taught in German, all modules with an English title in English! |

| Elective subject area (48 LP) | At least two areas of specialization with at least 15 LP each must be selected     |   |   |   |  |  |   |  |  |  |  |  |  |  |  |  |  |  | Statistical Inference |  |  |  |  |  | Econometrics |  |  |  |  |  | Quantitative Methods of Financial Markets |  |  |  |  |  | Survey Statistics |  |  |  |  |  | Applied Microeconomics and Quantitative Economic Research |  |  |  |  |  | Statistics in Life Sciences |  |  |  |  |  | Data Science |  |  |  |  |  |
|-------------------------------|--|---|---|---|--|--|---|--|--|--|--|--|--|--|--|--|--|--|-----------------------|--|--|--|--|--|--------------|--|--|--|--|--|---|--|--|--|--|--|-------------------|--|--|--|--|--|---|--|--|--|--|--|-----------------------------|--|--|--|--|--|--------------|--|--|--|--|--|
|                               |  |   |   |   |  |  |   |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               | Multivariate Statistics and Non- and Semiparametric Modelling<br>HU-WiWi   6   1.1 | Microeconomics<br>HU-WiWi   6   II.1                    | Time Series Analysis<br>HU-WiWi   6   III.1                             | Stichprobenverfahren<br>FU   6   IV.1   | Empirical Labor Economics<br>HU-WiWi   6   V.1         | Statistik für Biowissenschaften I<br>FU   6   VI.1   | Machine Learning 1<br>TU   6   VII.1  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               | Statistical Programming Languages<br>HU-WiWi   6   1.2.1                           | Microeconomics<br>TU   6   II.1.2                       | Time Series Analysis<br>TU   6   III.1.2                                | Neuere Statistische Methoden<br>FU   6   IV.2                                     | Applied Predictive Analytics<br>HU-WiWi   6   V.2      | Statistik für Biowissenschaften II<br>FU   6   VI.2  | Machine Learning 2<br>TU   6   VII.2  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               | Datenanalyse I<br>HU-WiWi   6   1.2.2  | Applied Microeconomics<br>FU   6   II.1.3               | Univariate Zeitreihenanalyse<br>FU   6   III.1.3                        | Varianzschätzmethoden<br>FU   6   IV.3  | Business Analytics & Data Science<br>HU-WiWi   6   V.3 | Multivariate Zeitreihenanalyse<br>HU-Psych   8   VI.3  | Multivariate Zeitreihenanalyse<br>HU-WiWi   6   VII.3                                 |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               | Datenanalyse II<br>HU-WiWi   6   1.2.3   | Time Series Analysis<br>HU-WiWi   6   II.2.1            | Time Series Analysis<br>TU   6   III.2                                  | Panel Surveys<br>FU   6   IV.4  | Advanced Marketing Modelling<br>HU-WiWi   6   V.4      | Panel Surveys<br>HU-Psych   8   VI.4   | Machine Learning 2<br>TU   6   VII.4  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               | Computergestützte Statistik<br>FU   6   1.2.5                                      | Time Series Analysis<br>TU   6   II.2.2                 | Univariate Zeitreihenanalyse<br>FU   6   II.2.3                         | Small Area Schätzverfahren<br>FU   6   IV.5                                       | Microeconomics<br>HU-WiWi   6   V.5.1                  | Statistische Beratung<br>HU-WiWi   6   VI.5  | Monte Carlo Methods in Machine Learning and Artificial Intelligence<br>TU   6   VII.5 |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               | Neuere Statistische Methoden<br>FU   6   1.3                                       | Analysis of Panel Data<br>HU-WiWi   6   II.3.1          | Stochastische Finanzmathematik I<br>HU-Math   10   III.4                | Einführung in die Bayes-Statistik<br>HU-WiWi   6   IV.6                           | Applied Microeconomics<br>HU-WiWi   6   V.5.3          | Advanced Biometric Methods<br>FU   5   VI.6  | Probabilistic and Bayesian Modelling in Machine Learning and AI<br>TU   6   VII.6     |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               | Aktuelle Forschungsfragen der Statistik<br>FU   6   1.4                            | Mathematische Statistik<br>HU-Math   10   1.5           | Econometric Analysis of Longitudinal and Panel Data<br>TU   6   III.3.2 | Stochastische Finanzmathematik II<br>HU-Math   10   III.5                         | Einführung in die Multiple Imputation<br>FU   6   IV.7 | Methods of Clinical Trials<br>FU   5   VI.7  | Projects in Machine Learning and Artificial Intelligence<br>TU   5   VII.7            |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               |  | Nichtparametrische Statistik<br>HU-Math   10   1.6      | Ökonometrische Analyse<br>FU   6   II.4                                 | Ausgewählte Themen der Finanz- und Versicherungsmathematik<br>HU-Math   6   III.6 | Simulation und Stichprobziehung<br>FU   6   IV.8       | Statistical Methods for Small Sample Sizes<br>FU   5   VI.8  | Regression-based Statistical Learning with R<br>TU   6   VII.8                        |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               | Statistik stochastischer Prozesse<br>HU-Math   5   1.7                             | Multivariate Zeitreihenanalyse<br>FU   6   II.5         | Selected Topics in Quantitative Finance<br>HU-WiWi   6   III.7          | Seminar zur Survey Statistik<br>HU-WiWi   6   IV.9                                | Analysis of Panel Data<br>HU-WiWi   6   V.6.1          | Selected Topics in Statistics In the Life Sciences<br>FU   5   VI.9                                    | Statistical Learning and Machine Learning<br>HU   6   VII.9                           |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               | Statistische Beratung<br>FU   6   1.8  | Estimation of Treatment Effects<br>HU-WiWi   6   II.6.1 | Stochastik II<br>HU-Math   10   III.8                                   | Stochastic II<br>HU-Math   10   IV.10   | Estimation of Treatment Effects<br>HU-WiWi   6   V.7.1 | Resampling Techniques and Their Applications<br>HU   5   VI.10   | Advanced Data Analytics for Management Support<br>HU   6   VII.10                     |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               | Statistical Inference I<br>HU-WiWi   6   1.9                                       | Treatment Effects Analysis<br>TU   6   II.6.2           | Statistik stochastischer Prozesse<br>HU-Math   5   III.9                | Statistische Beratung<br>FU   6   IV.11   | Treatment Effects Analysis<br>TU   6   V.7.2           | Seminar Information Systems<br>HU   6   VI.11  | Seminar Information Systems<br>HU   6   VII.11  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               | Statistical Inference II<br>HU-WiWi   6   1.10                                     | Econometric Projects<br>HU-WiWi   6   II.7              | Ausgewählte Themen der Stochastik<br>HU-Math   5   III.9                | Selected Topics in Survey Statistics<br>HU-Math   6   IV.12                       | Econometric Projects<br>HU-WiWi   6   V.8              | Research Seminar in Data Science<br>HU   6   VI.12   | Research Seminar in Data Science<br>HU   6   VII.12                                   |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               | Generalized Regression<br>HU-WiWi   6   1.11                                       | Selected Topics in Econometrics<br>HU-WiWi   6   II.8   | Introduction to Financial Econometrics<br>TU   6   II.9                 | Panel Surveys<br>FU   6   V.10  | Selected Topics in Econometrics<br>HU-WiWi   6   V.9   | Introduction to Natural Language Processing<br>HU-Inf   6   VI.13                                      | Introduction to Natural Language Processing<br>HU-Inf   6   VII.13                    |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               | Advanced Regression Modelling<br>HU-WiWi   6   1.12                                | Selected Topics in Statistics<br>HU-WiWi   6   II.10    | Aktuelle Forschungsfragen der Ökonometrie<br>FU   6   II.10             | Selected Topics in Applied Econometrics<br>FU   6   V.11                          | Panel Surveys<br>FU   6   V.10                         | Applied Predictive Analytics<br>HU   6   VII.14  | Applied Predictive Analytics<br>HU   6   VIII.14                                      |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               |  |   |   |   |  | Maßtheorie<br>HU-Math   6   VI.16  | Business Analytics & Data Science<br>HU   6   VII.16                                  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               |  |   |   |   |  | Stochastik II<br>HU-Math   10   VII.17   | Machine Intelligence I<br>TU   6   VII.17   |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               |  |   |   |   |  | Nutzung der Amtlichen Stat. in den Wirt.- und Sozialw.<br>HU-WiWi   6   VII.18                         | Machine Intelligence II<br>TU   6   VII.18  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               |  |   |   |   |  | Further Modules from Master VWL<br>HU-WiWi   6   VII.19  |   |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               |  |   |   |   |  | The remaining LP can be chosen from all modules of the specialization areas and the following modules: |   |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |
|                               |  |   |   |   |  |  |   |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |              |  |  |  |  |  |   |  |  |  |  |  |                   |  |  |  |  |  |   |  |  |  |  |  |                             |  |  |  |  |  |              |  |  |  |  |  |

| Interdisciplinary Compulsory Elective Courses (10 LP): Modules from the module catalogs of other subjects intended for this purpose or central institutions of the universities participating in the program, for example |  |   |                          |  |  |
|---|--|---|--------------------------|--|--|
| Interdisciplinary elective courses from other schools of HU   | Subject-specific and interdisciplinary courses from other universities | Subject-specific and interdisciplinary courses from universities abroad | HU Career Center courses | Language courses<br>(note that special regulations for language courses exist) | Six-week internship, full-time or twelve weeks, half-time (the internship is not required as a mandatory internship) |
|   |  |   |                          |  |  |