

This is an informal illustration: legally binding is exclusively the [Studien- und Prüfungsordnung](#)

Every student has to choose (exactly) one track. There is no prior enrollment into a certain track needed. The track is finally determined by choosing the corresponding seminar. In particular, it is possible in the first semester to attend lectures from different tracks to get an overview.

***Further Suggestions:***

- *It is recommended to attend the mandatory courses as soon as possible. They provide the basis for many other courses.*
- *For the courses called “Selected Topics of...” several modules can be recognized.*
- *Please be aware that some courses build on other courses. The information is conveyed through the corresponding Moodle course pages. Please make sure that you fulfil the course requirements before beginning the course.*
- *The modules Consulting and Seminar are recommended for the third semester. They are recommended to be attended before beginning the Master’s Thesis.*

# Machine Learning

## Winter Semester

Semester	Mandatory (ECTS)	Choice (ECTS)
1	Statistical Modelling (12) Supervised Learning (6) Optimization (6) <i>Choice Modules</i>	<b>12 ECTS from:</b> Advanced Machine Learning (6) Applied Machine Learning (6) Current Research in Machine Learning (6) Automated Machine Learning (6) Selected Topics of Machine Learning (6)  <b>Rest is free choice</b>
2	Statistical Inference (9) Deep Learning (6) <i>Choice Modules</i>	
3	Seminar: Machine Learning (9) Consulting (12) <i>Choice Modules</i>	
4	Master's Thesis + Disputation (30)	

## Summer Semester

Semester	Mandatory (ECTS)	Choice (ECTS)
1	Statistical Modelling (12) Statistical Inference (9) Deep Learning (6) <i>Choice Modules</i>	<b>12 ECTS from:</b> Advanced Machine Learning (6) Applied Machine Learning (6) Current Research in Machine Learning (6) Automated Machine Learning (6) Selected Topics of Machine Learning (6)  <b>Rest is free choice</b>
2	Supervised Learning (6) Optimization (6) <i>Choice Modules</i>	
3	Seminar: Machine Learning (9) Consulting (12) <i>Choice Modules</i>	
4	Master's Thesis + Disputation (30)	

# Methodology and Modeling

## Starting in the Winter Semester

Semester	Mandatory (ECTS)	Choice (ECTS)
1	Statistical Modelling (12) Supervised Learning (6) <i>Choice Modules</i>	<b>Two from:</b> Survival Analysis (6) Regression for Correlated Data (6) Decision Theory (6)  <b>Additionally at least 12 ECTS from:</b> Survival Analysis (6) Regression for Correlated Data (6) Decision Theory (6) Methodological Discourses in Statistics and Data Science (6) Design of Experiments (6) Advanced Mathematical Concepts for Statistics and Data Science (6) Stochastic Processes (6) Measurement and Modelling in Social Sciences (6) Advanced Statistical Modelling (6) Selected Topics of Methodology and Modelling (3) <b>Rest is free choice</b>
2	Statistical Inference (9) <i>Choice Modules</i>	
3	Seminar: Methodology and Modelling (9) Consulting (12) <i>Choice Modules</i>	
4	Master's Thesis + Disputation (30)	

## Starting in the Summer Semester

Semester	Mandatory (ECTS)	Choice (ECTS)
1	Statistical Modelling (12) Statistical Inference (9) <i>Choice Modules</i>	<b>Two from:</b> Survival Analysis (6) Regression for Correlated Data (6) Decision Theory (6)  <b>Additionally at least 12 ECTS from:</b> Survival Analysis (6) Regression for Correlated Data (6) Decision Theory (6) Methodological Discourses in Statistics and Data Science (6) Design of Experiments (6) Advanced Mathematical Concepts for Statistics and Data Science (6) Stochastic Processes (6) Measurement and Modelling in Social Sciences (6) Advanced Statistical Modelling (6) Selected Topics of Methodology and Modelling (3) <b>Rest is free choice</b>
2	Supervised Learning (6) <i>Choice Modules</i>	
3	Seminar: Methodology and Modelling (9) Consulting (12) <i>Choice Modules</i>	
4	Master's Thesis + Disputation (30)	

## Econometrics

### Winter Semester

Semester	Mandatory (ECTS)	Choice (ECTS)
1	Statistical Modelling (12) Supervised Learning (6) Causal Inference (6) <i>Choice Modules</i>	<b>One of:</b> Machine Learning in Econometrics (6) Nonparametric Econometrics (6)  <b>Additionally at least 6 ECTS from:</b> Basic Concepts and Structures in Official Statistics (6) Survival Analysis (6) Official Statistics on Households, Enterprises, Economies and Populations (6) Time Series (6) Machine Learning in Econometrics (6) Selected Topics in Econometrics (3) Regression for Correlated Data (6) Decision Theory (6) Measurement and Modeling in Social Sciences (6) Nonparametric Econometrics (6) Current Research in Econometrics (6) Advanced Applied Econometrics (6) <b>Rest is free choice</b>
2	Statistical Inference (9) Econometric Theory (6) <i>Choice Modules</i>	
3	Seminar: Econometrics (9) Consulting (12) <i>Choice Modules</i>	
4	Master's Thesis + Disputation (30)	

### Summer Semester

Semester	Mandatory (ECTS)	Choice (ECTS)
1	Statistical Modelling (12) Statistical Inference (9) Econometric Theory (6) <i>Choice Modules</i>	<b>One of:</b> Machine Learning in Econometrics (6) Nonparametric Econometrics (6)  <b>Additionally at least 6 ECTS from:</b> Basic Concepts and Structures in Official Statistics (6) Survival Analysis (6) Official Statistics on Households, Enterprises, Economies and Populations (6) Time Series (6) Machine Learning in Econometrics (6) Selected Topics in Econometrics (3) Regression for Correlated Data (6) Decision Theory (6) Measurement and Modeling in Social Sciences (6) Nonparametric Econometrics (6) Current Research in Econometrics (6) Advanced applied Econometrics (6) <b>Rest is free choice</b>
2	Supervised Learning (6) Causal Inference (6) <i>Choice Modules</i>	
3	Seminar: Econometrics (9) Consulting (12) <i>Choice Modules</i>	
4	Master's Thesis + Disputation (30)	

## Social Statistics and Data Science

### Winter Semester

Semester	Mandatory (ECTS)	Choice (ECTS)
1	Statistical Modelling (12) Supervised Learning (6) <i>Choice Modules</i>	<b>Two from:</b> Complex Samples and Data Structures (6) Data Collection and Questionnaire Design (6) Measurement and Modelling in Social Sciences (6)
2	Statistical Inference (9) <i>Choice Modules</i>	
3	Seminar: Social Statistics and Data Science (9) Consulting (12) <i>Choice Modules</i>	<b>Additionally at least 12 ECTS from:</b> Complex Samples and Data Structures (6) Basic Concepts and Structures in Official Statistics (6) Causal Inference (6) Survival Analysis (6) Data Collection and Questionnaire Design (6) Official Statistics on Households, Enterprises, Economies and Populations (6) Advanced Methods in Social Statistics and Social Data Science (6) Regression for Correlated Data (6) Decision Theory (6) Measurement and Modeling in Social Sciences (6) Computational Social Science (6) Selected Topics of Social Statistics and Social Data Science (3) <b>Rest is free choice</b>
4	Master's Thesis + Disputation (30)	

Summer Semester

Semester	Mandatory (ECTS)	Choice (ECTS)
1	Statistical Modelling (12) Statistical Inference (9) <i>Choice Modules</i>	<b>Two from:</b> Complex Samples and Data Structures (6) Data Collection and Questionnaire Design (6) Measurement and Modelling in Social Sciences (6)  <b>Additionally at least 12 ECTS from:</b> Complex Samples and Data Structures (6) Basic Concepts and Structures in Official Statistics (6) Causal Inference (6) Survival Analysis (6) Data Collection and Questionnaire Design (6) Official Statistics on Households, Enterprises, Economies and Populations (6) Advanced Methods in Social Statistics and Social Data Science (6) Regression for Correlated Data (6) Decision Theory (6) Measurement and Modeling in Social Sciences (6) Computational Social Science (6) Selected Topics of Social Statistics and Social Data Science (3) <b>Rest is free choice</b>
2	Supervised Learning (6) <i>Choice Modules</i>	
3	Seminar: Social Statistics and Data Science (9) Consulting (12) <i>Choice Modules</i>	
4	Master's Thesis + Disputation (30)	

# Biostatistics

## Winter Semester

Semester	Mandatory (ECTS)	Choice (ECTS)
1	Statistical Modelling (12) Supervised Learning (6) Preclinical and Clinical Studies (6) <i>Choice Modules</i>	<b>12 ECTS from:</b> Diagnostic Accuracy Studies (6) Selected Topics of Biostatistics (6) Analysis of High-dimensional Biological Data (6) Introduction to Medical Terminology (3) Statistical Methods in Epidemiology (6) Advanced Methods in Biostatistics (6) Selected Biostatistical Applications (3)  <b>Additionally at least 6 ECTS from:</b> Survival Analysis (6) Diagnostic Accuracy Studies (6) Selected Topics of Biostatistics (6) Analysis of High-dimensional Biological Data (6) Regression for Correlated Data (6) Statistical Methods in Epidemiology (6) Advanced Methods in Biostatistics (6) Selected Biostatistical Applications (3) <b>Rest is free choice</b>
2	Statistical Inference (9) <i>Choice Modules</i>	
3	Seminar: Biostatistics (9) Consulting (12) <i>Choice Modules</i>	
4	Master's Thesis + Disputation (30)	

## Summer Semester

Semester	Mandatory (ECTS)	Choice (ECTS)
1	Statistical Modelling (12) Statistical Inference (9) <i>Choice Modules</i>	<b>12 ECTS from:</b> Diagnostic Accuracy Studies (6) Selected Topics of Biostatistics (6) Analysis of High-dimensional Biological Data (6) Statistical Methods in Epidemiology (6) Advanced Methods in Biostatistics (6) Selected Biostatistical Applications (3)  <b>Additionally at least 6 ECTS from:</b> Survival Analysis (6) Diagnostic Accuracy Studies (6) Selected Topics of Biostatistics (6) Analysis of High-dimensional Biological Data (6) Regression for Correlated Data (6) Statistical Methods in Epidemiology (6) Advanced Methods in Biostatistics (6) Selected Biostatistical Applications (3) <b>Rest is free choice</b>
2	Supervised Learning (6) Preclinical and Clinical Studies (6) <i>Choice Modules</i>	
3	Seminar: Biostatistics (9) Consulting (12) <i>Choice Modules</i>	
4	Master's Thesis + Disputation (30)	