

Modules in the winter term 2024/25 for Statistics and Data Science (PO 2021)

Module	Courses and LSF-Link to the lecture
P 1 Statistical Modelling	Statistical Modelling
P 2 Supervised Learning	Supervised Learning
P 3 Statistical Inference	Statistical Inference
P 4 Consulting	Consulting
P 5 Final Module	Can be started at any time
WP 1 Optimization	Optimization
WP 2 Preclinical and Clinical Studies	Preclinical and Clinical Studies
WP 3 Complex Samples and Data Structures	Complex Samples and Data Structures
WP 4 Basic Concepts and Structures in Official Statistics, Dissemination and Privacy Protection	Basic Concepts and Structures in Official Statistics, Dissemination and Privacy Protection
WP 5 Causal Inference	Causal Inference
WP 6 Survival Analysis	Survival Analysis
WP 11 Selected Topics of Biostatistics	Epistemic Foundations of Statistics Context of Open Science and the Replication Crisis (3 ECTS)
	Statistical planning of randomized clinical trials (3 ECTS)
	Biostatistik in der medizinischen Forschung + Nutzenbewertung von Arzneimitteln
WP 20 Selected Topics of Econometrics	Epistemic Foundations of Statistics Context of Open Science and the Replication Crisis (3 ECTS)
	Theoretical Foundations of Deep Learning (3 ECTS)
WP 23 Methodological Discourses in Statistics and Data Science	Entropy
WP 25 Advanced Mathematical Concepts for Statistics and Data Science	Entropy
	Mathematical Statistics
WP 27 Teaching Statistics and Data Science	impACTup!: Innovation and Entrepreneurship for Better Futures
WP 28 Statistical Literacy	Statistics for the Public Good – Infrastructure for Decision Making, Research and Discourse
WP 29 Selected Topics of Applied Statistics	Epistemic Foundations of Statistics Context of Open Science and the Replication Crisis (3 ECTS)

WP 29 Selected Topics of Applied Statistics	<u>Paradigm Shifts in the Foundations of Statistics? -- Betting strategies, compression algorithms, imprecise probabilities, and decision theory for uncertainty quantification and learning (3 ECTS)</u>
	<u>Statistical planning of randomized clinical trials (3 ECTS)</u>
	<u>Statistics for the Public Good – Infrastructure for Decision Making, Research and Discourse</u>
	<u>Theoretical Foundations of Deep Learning (3 ECTS)</u>
	<u>SAS Course</u>
WP 31 Advanced Research Methods in Applied Statistics	<u>Seminar</u>
WP 32 Current Research in Machine Learning	<u>Deep Learning for NLP</u>
	<u>Uncertainty in Artificial Intelligence and Machine Learning</u>
WP 33 Automated Machine Learning	<u>Automated Machine Learning</u>
WP 34 Selected Topics of Machine Learning	<u>Epistemic Foundations of Statistics Context of Open Science and the Replication Crisis (3 ECTS)</u>
	<u>Paradigm Shifts in the Foundations of Statistics? -- Betting strategies, compression algorithms, imprecise probabilities, and decision theory for uncertainty quantification and learning (3 ECTS)</u>
	<u>Theoretical Foundations of Deep Learning (3 ECTS)</u>
WP 35 Statistical Methods in Epidemiology	<u>Statistical Methods in Epidemiology</u>
WP 37 Selected Biostatistical Applications	<u>Biostatistik in der medizinischen Forschung + Nutzenbewertung von Arzneimitteln</u>
WP 38.1 Measurement and Modelling in Social Sciences	<u>Data Privacy</u>
WP 39 Computational Social Science	<u>Computational Social Science</u>
WP 40 Selected Topics of Social Statistics and Social Data Science	<u>Epistemic Foundations of Statistics Context of Open Science and the Replication Crisis (3 ECTS)</u>
	<u>Paradigm Shifts in the Foundations of Statistics? -- Betting strategies, compression algorithms, imprecise probabilities, and decision theory for uncertainty quantification and learning (3 ECTS)</u>
	<u>Statistics for the Public Good – Infrastructure for Decision Making, Research and Discourse</u>
	<u>Data Privacy</u>
WP 41 Nonparametric Econometrics	<u>Nonparametric Econometrics</u>

WP 43 Advanced Applied Econometrics	Econometrics (Lecture)
WP 44 Advanced Statistical Modelling	Bayesian Modelling
WP 45 Spatial Statistics	Spatial Statistics
WP 46 Selected Topics of Methodology and Modelling	Epistemic Foundations of Statistics Context of Open Science and the Replication Crisis (3 ECTS)
	Paradigm Shifts in the Foundations of Statistics? -- Betting strategies, compression algorithms, imprecise probabilities, and decision theory for uncertainty quantification and learning (3 ECTS)
	Statistical planning of randomized clinical trials (3 ECTS)
	Statistics for the Public Good – Infrastructure for Decision Making, Research and Discourse
	Theoretical Foundations of Deep Learning (3 ECTS)
WP 48 Recent Advances in Theoretical Statistics	Entropy
	Uncertainty in Artificial Intelligence and Machine Learning
WP 51 Advanced Research Methods in Theoretical Statistics	Seminar
WP 52 Advanced Research Methods in Machine Learning	Seminar
WP 53 Advanced Research Methods in Biostatistics	Seminar
WP 54 Advanced Research Methods in Social Statistics and Social Data Science	Seminar
WP 55 Advanced Research Methods in Econometrics	Seminar
WP 56 Advanced Research Methods in Methodology and Modelling	Seminar
WP 7 Deep Learning	offered in the summer term
WP 8 Advanced Machine Learning	offered in the summer term
WP 9 Applied Machine Learning	offered in the summer term
WP 10 Diagnostic Accuracy Studies	offered in the summer term
WP 12 Analysis of High-dimensional Biological Data	offered in the summer term
WP 13 Introduction to Medical Terminology	offered in the summer term
WP 14 Data Collection and Questionnaire Design	offered in the summer term
WP 15 Official Statistics on Households, Enterprises, Economies and Populations	offered in the summer term
WP 16 Advanced Methods in Social Statistics and Social Data Science	offered in the summer term

WP 17 Econometric Theory	offered in the summer term
WP 18 Time Series	offered in the summer term
WP 19 Machine Learning in Econometrics	offered in the summer term
WP 21 Regression for Correlated Data	offered in the summer term
WP 22 Decision Theory	offered in the summer term
WP 24 Design of Experiments	offered in the summer term
WP 26 Stochastic Processes	offered in the summer term
WP 30 Selected Software for Applied Statistics	offered in the summer term
WP 36 Advanced Methods in Biostatistics	Upon request possible, please contact Lea Höhler
WP 42 Current Research in Econometrics	Upon request possible, please contact Lea Höhler
WP 47 Advanced Programming	Upon request possible, please contact Lea Höhler
WP 49 Selected Topics of Statistical Computing	Upon request possible, please contact Lea Höhler
WP 50 Selected Topics of Programming	Upon request possible, please contact Lea Höhler

Please note: It is not claimed that this list is exhaustive.