Applied Statistics (M.Sc., Master Degree Programme)
Study plan | Start in winter term

Version: 11.02.2025

Note: The following overview offers a non-binding overview of the structure and composition of the modules. The legally binding criteria is available in the examination regulations.

Module code	Module title (Compulsory/Elective)	Sem.	CP	Type	hours	Course title	Assessment	Module Convenor	Comment/ Language
1. Semester (Wi)									
■ **MA4AST1001**	Elements of Statistics and Econometrics (P)	Wi	10	V	4	Elements of Statistics and Econometrics		Münnich	English
				Ü	2	Elements of Statistics and Econometrics			
						Portfolio examination			
■ **MA4AST1026**	Statistical Programming with R (P)	Wi	5	V+ Ü	2	Statistical Programming with R		Münnich	English
						Portfolio examination			
■ **MA4AST1002**	Monte Carlo Simulation Methods (P)	Wi	5	V	2	Monte Carlo Simulation Methods		Münnich	English
				Ü	1	Monte Carlo Simulation Methods			
						Poster presentation			
■	Specialisation	Wi	10	*10 credit points to fulfill according to the conditions of the elected specialization.*					

2. Semester (Su)									
■ MA4AST1003	General Statistics #1 (P)	Su	10	V+Ü /V	5	Lecture and practical course respective lecture from the range of courses in the module		Münnich	English
				Graded coursework assessment: Oral exam (15–30 min.) Term paper					
■ MA4AST1004	General Statistics #2 (P)	Su	10	V+Ü /V	5	Lecture and practical course respective lecture from the range of courses in the module		Münnich	English
				Graded coursework assessment: Oral exam (15–30 min.) Term paper					
■	Specialisation	Su	10	*10 credit points to fulfill according to the conditions of the elected specialization.*					
3. Semester (Wi)									
■ MA4AST1005	Application (P)	Wi	10	*After consultation with the respective faculty member, a freely selected choice of modules on the topic of quantitative methods or from a field of application (e.g., political economics, mathematics, sociology).*					English/ German
				According to the examination regulations of the respective field of study					
■ MA4AST1006	Research Project (P)	Wi	10	KOL/ S	2	Research Project [Can be replaced under certain conditions with an internship or participation in a research project (3 months)]		Münnich	English
				Portfolio examination					
■	Specialisation	Wi	10	*10 credit points to fulfill according to the conditions of the elected specialization.*					
4. Semester (Su)									
■ MA4AST1007	Master's Thesis (P)	Su	30	2		Master's thesis			
				Master's thesis with colloquium					

SPECIALISATION „SURVEY STATISTICS"

1. Semester (Wi)									
■ MA4AST1008	Survey Sampling	Wi	5	V	2	Survey Sampling		Münnich	English
				Ü	1	Survey Sampling			
				Exam (90–120 min.)					
1., 2. or 3. Semester (Wi/Su)									
■ MA4AST1009	Specialisation Module – Survey Statistics #1	Wi/ Su	5	V+Ü /V	2	Lecture and practical course respective lecture from the range of courses in the module		Münnich	English
				Exam (90–120 min.) *or* oral exam (15–30 min.); *or* according to the examination regulations of the external partner					
■ MA4AST1010	Specialisation Module – Survey Statistics #2	Wi/ Su	5	V+Ü /V	2	Lecture and practical course respective lecture from the range of courses in the module		Münnich	English
				Exam (90–120 min.) *or* oral exam (15–30 min.); *or* according to the examination regulations of the external partner					
■ MA4AST1011	Specialisation Module – Survey Statistics #3	Wi/ Su	5	V+Ü /V	2	Lecture and practical course respective lecture from the range of courses in the module		Münnich	English
				Exam (90–120 min.) *or* oral exam (15–30 min.); *or* according to the examination regulations of the external partner					
■ MA4AST1012	Specialisation Module – Survey Statistics #4	Wi/ Su	5	V+Ü /V	2	Lecture and practical course respective lecture from the range of courses in the module		Münnich	English
				Exam (90–120 min.) *or* oral exam (15–30 min.); *or* according to the examination regulations of the external partner					
■ MA4AST1013	Specialisation Module – Survey Statistics #5	Wi/ Su	5	V+Ü /V	2	Lecture and practical course respective lecture from the range of courses in the module		Münnich	English
				Exam (90–120 min.) *or* oral exam (15–30 min.); *or* according to the examination regulations of the external partner					

| MA4AST1014 | Specialisation Module Survey Statistics: Seminar | Wi/ Su | 5 | S | 2 | Seminar from the range of courses in the module | | Münnich | English |
| | | | | | | Term paper | | | |

SPECIALISATION „EUROPEAN MASTER IN OFFICIAL STATISTICS (EMOS)"

1 or 2. Semester (Su)									
■ MA4AST1015	EMOS Core Module	Su	10	V	2	Lecture from the range of courses in the module (can be replaced by attending an EMOS Spring School or Summer School, if there is one)		Münnich	English
						Term paper *or* exam in association with Eurostat/ European Statistical System			
1., 2. or 3. Semester (Wi/Su)									
■ MA4AST1009	Specialisation Module – Survey Statistics #1	Wi/ Su	5	V+Ü /V	2	Lecture and practical course respective lecture from the range of courses in the module		Münnich	English
						Exam (90–120 min.) or oral exam (15–30 min.); or according to the examination regulations of the external partner			
■ MA4AST1010	Specialisation Module – Survey Statistics #2	Wi/ Su	5	V+Ü /V	2	Lecture and practical course respective lecture from the range of courses in the module		Münnich	English
						Exam (90–120 min.) *or* oral exam (20–30 min.); according to the examination regulations of the external partner			
■ MA4AST1011	Specialisation Module – Survey Statistics #3	Wi/ Su	5	V+Ü /V	2	Lecture and practical course respective lecture from the range of courses in the module		Münnich	English
						Exam (90–120 min.) or oral exam (15–30 min.); or according to the examination regulations of the external partner			
■ MA4AST1012	Specialisation Module – Survey Statistics #4	Wi/ Su	5	V+Ü /V	2	Lecture and practical course respective lecture from the range of courses in the module		Münnich	English
						Exam (90–120 min.) or oral exam (15–30 min.); or according to the examination regulations of the external partner			

MA4AST1014	Specialisation Module Survey Statistics: Seminar	Wi/ Su	5	S	2	Lecture and practical course respective lecture from the range of courses in the module		Münnich	English
						Term paper			

SPECIALISATION „DATA SCIENCE"

1. Semester (Wi)									
■ MA4DSC009	Elements of Computer Science	Wi	10	EL	1	Elements of Computer Science		Schenkel	English
				Ü	3	Elements of Computer Science			
				Exam (120 min.) *and* exam (90 Min.)					
■ MA4DSC008	Elements of Mathematics	Wi	10	V	4	Elements of Mathematics		Schulz	English
				Ü	2	Elements of Mathematics			
				Exam (120 Min.)					
2. Semester (Su)									
■ MA4AST1017	Statistical Methods of Data Science	Su	10	V	4	Statistical Methods of Data Science		Münnich	English
				Exam (90 min.)					
1., 2. or 3. Semester (Su/Wi)									
■ MA4AST1018	Specialisation Module in Data Science	Su	10	V	3-6	Lecture from the range of courses in the module			English
				According to the examination regulations of the external field of study					

SPECIALISATION „GEOSTATISTICS"

1. Semester (Wi)									
■ MA4AST1019	Geostatistics	Wi	5	V	2	Geostatistics		Udelhoven	English
				Ü	2	Geostatistics			
				Portfolio examination					
■ MA4AST1020	Introduction to Geoinformatics	Wi	5	Ü	2	Introduction to Geoinformatics		Udelhoven	English
				EL	1	Introduction to Geoinformatics			
				Exam (60 min.)					
■ MA4AST1026	Fundamentals of Remote Sensing	Wi	5	V	2	Fundamentals of Remote Sensing		Udenhoven	English
				Ü	2	Fundamentals of Remote Sensing			
				Exam (60 Min.)					
2. Semester (Su)									
■ MA4AST1021	Advanced Methods in GIS and Applications	Su	5	Ü	2	Advanced Methods in GIS and Applications		N.N.	English
				Ü	1	Advanced Methods in GIS and Applications			
				Term paper					
■ MA4AST1022	Pattern Recognition in Long-Term Global Satellite Archives	Su	5	V	2	Pattern Recognition in Long-Term Global Satellite Archives		Udelhoven	English
				Ü	2	Pattern Recognition in Long-Term Global Satellite Archives			
				Exam (90 min.)					
■ MA4AST1023	Advanced Remote Sensing Data Processing and Analysis	Su	5	Ü	3	Advanced Remote Sensing Data Processing		Udelhoven, Röder	English
				GK	1	Advanced Remote Sensing Data Processing			
				Term paper					

3. Semester (Wi)									
■ MA4AST1024	Ecosystem Remote Sensing and Modelling Concepts	Wi	5	PRA	2	Ecosystem Remote Sensing and Modelling		Udelhoven	English
				S	2	Ecosystem Remote Sensing and Modelling			
							Term paper		
■ MA4AST1025	Remote Sensing of Global Change Processes	Wi	5	S	2	Remote Sensing of Global Change Processes		Röder	English
				Ü	2	Remote Sensing of Global Change Processes			
							Term paper		

List of abbreviations

Compulsory attendance courses

EX	Field trip/Day Field trip	LAB	Lab/lab course	PRS	Practice-oriented seminar
GÜ	Field exercise	PRA	Internship	PRÜ	Practical course
KOS	Colloquium seminar	PRO	Project seminar	SPÜ	Language course

Non-compulsory attendance courses

EL	E-Learning-Course	LK	Reading course	TUT	Tutorium
FK	Specialized Course	OS	Advanced seminar	Ü	Practical course
HS	Master's-level seminar	PRP	Preparatory course	V	Lecture
KOL	Colloquium	PS	Bachelor's-level seminar	V+Ü	Lecture with practical course
K	Course	S	Seminar		

Other abbreviations

LP	Credit Points	SWS	Hours	WP	Elective module or course
P	Compulsory module	So	Summer term		
Sem	Semester	Wi	Winter term		