

Study Plan (AIMS)

Specialization: Spectroscopy and Imaging



Name: _____

Year of Enrollment: _____

Matriculation Number: _____

Mentor: _____

Winter Semester (1st Semester)		approx. 30 CP		
Foundations 1.-2. Semester 26 CP (total)	Compulsory	CP		
		AM-P-1 Introduction to AIMS	5	x
		AM-P-2 Mathematics for Engineers A	8	x
		AM-P-3 Programming in Python and Python Lab	8	x
Advanced Machine Learning and AI 1.-3. Semester 15 CP (total)	Elective	AM-V-2 Pattern Recognition (offered in German in winter semester)	5	
		AM-V-3 Computer Lab Pattern Recognition	5	
Specialization Spectroscopy and Imaging 1.-3. Semester 37 CP (total)	Elective (16-20 CP)	AM-B-4 Solar and Chemical Energy Conversion*	8	
		AM-B-5 Physical Biology of the Cell	10	
		AM-B-7 Chemometrics (only in German)	5	
		AM-B-8 Theoretical Spectroscopy	8	
		AM-B-9 Biophysical Chemistry - Applied Optical Methods and Imaging	8	
		AM-A-10 Machine Learning in Computational Chemistry	8	
		A) Sum of achieved CP for Specialization		
Key Qualifications 1.-3. Semester 12 CP (total)	Compulsory	AM-KQ-1 Ethics and Epistemology	5	x
	Elective	AM-KQ-2 Professionalization - Elective Modules	7	

*Frequency of courses: lectures: irregularly; practical course: every semester

Summer Semester (2nd Semester)		approx. 30 CP		
Foundations 1.-2. Semester 26 CP (total)	Compulsory	CP		
		AM-P-4 Scientific Software Engineering – Lab	5	x
Advanced Machine Learning and AI 1.-3. Semester 15 CP (total)	Elective	AM-V-1 Machine Learning for Data Science	5	
		AM-V-2 Pattern Recognition	5	
		AM-V-3 Computer Lab Pattern Recognition	5	
		AM-V-4 Deep Learning Lab	5	
		AM-V-5 Methods of Uncertainty Analysis and	5	
Specialization Spectroscopy and Imaging 1.-3. Semester 37 CP (total)	Compulsory Basic Module (5 CP)	AM-B-1 Molecular Spectroscopy	5	x
	Elective (15-20 CP)	AM-B-4 Solar and Chemical Energy Conversion*	8	
		AM-B-6 Sophisticated Imaging	10	
		AM-B-6 Sophisticated Imaging (light)	5	
		AM-B-10 Biophysical Chemistry - Nanoscale Structure and Spectroscopy	8	
		B) Sum of achieved CP for Specialization		
Key Qualifications 1.-3. Semester 12 CP (total)	Elective	AM-KQ-2 Professionalization - Elective Modules	7	

*Frequency of courses: lectures: irregularly; practical course: every semester

Winter Semester (3rd Semester)		approx. 30 CP		
Advanced Machine Learning and AI 1.-3. Semester 15 CP (total)	Elective	CP		
		AM-V-2 <i>Pattern Recognition (offered in German in winter semester)</i>	5	
		AM-V-3 Computer Lab Pattern Recognition	5	
Specialization Spectroscopy and Imaging 1.-3. Semester 37 CP (total)	Elective (15-20 CP)	AM-V-4 <i>Solar and Chemical Energy Conversion*</i>	8	
		AM-B-5 Physical Biology of the Cell	10	
		AM-B-7 <i>Chemometrics (only in German)</i>	5	
		AM-B-8 Theoretical Spectroscopy	8	
		AM-B-9 Biophysical Chemistry - Applied Optical Methods and Imaging	8	
		AM-A-10 Machine Learning in Computational Chemistry	8	
	Compulsory (12-17 CP)	C) Sum of achieved CP for Specialization		
		AM-B-RP Research Lab	12-17	x
Key Qualifications 1.-3. Semester 12 CP (total)	Compulsory	AM-KQ-1 Ethics and Epistemology	5	x
		AM-KQ-2 Professionalization - Elective Modules	7	
	Elective			

*Frequency of courses: lectures: irregularly; practical course: every semester

Summer Semester (4th Semester)		approx. 30 CP		
Final Module 4. Semester 30 CP	Compulsory	CP		
		AM-M Master's Thesis and Presentation	30	x

120 CP in total

Date: _____ Signature Student: _____

Signature Mentor: _____