Study Plan (AIMS)

Specialisation: Spectroscopy and Imaging

Technische Universität Braunschweig

Name:_____ Year of Enrollment:_____

Matricle Number:_____ Mentor:_____

1st Semester (winter semester)		CP		30 CP
Compulsory	Introduction to AIMS	5	x	**Foundations** 1.-2. Semester **26 CP (total)**
	Mathematics for Engineers A	8	x	
	Programming in Python and Python Lab	8	x	
Compulsory Elective (16-20 CP)	Biophysical Chemistry	8		Specialisation **Spectroscopy and Imaging** 1.-3. Semester **37 CP (total)**
	Modern Optical Methods and Imaging	8		
	*Solar and Chemical Energy Conversion**	8		
	Physical Biology of the Cell	10		
	Chemometrics	6		
	Theoretical Spectroscopy	8		
	Machine Learning in Computational Chemistry	8		
	A) Sum of achieved CP for Specialisation			
Compulsory	Ethics and Epistemology	5	x	**Key Qualifications** 1.-3. Semester **12 CP (total)**

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

2nd Semester (summer semester)		CP		30 CP
Compulsory	Scientific Software Engineering – Lab	5	x	**Foundations** 1.-2. Semester **26 CP (total)**
Compulsory Elective	Machine Learning for Data Science	5		**Advanced Machine Learning and AI** 2.-3. Semester **15 CP (total)**
	Pattern Recognition	5		
	Computer Lab Pattern Recognition	5		
	Deep Learning Lab	5		
	Methods of Uncertainty Analysis and Quantification	5		
Compulsory Basic Module (5 CP)	Molecular Spectroscopy	5	x	Specialisation **Spectroscopy and Imaging** 1.-3. Semester **37 CP (total)**
Compulsory Elective (16-20 CP)	*Solar and Chemical Energy Conversion**	8		
	Sophisticated Imaging	10		
	B) Sum of achieved CP for Specialisation			
Compulsory Elective	Elective Modules	7		**Key Qualifications** 1.-3. Semester **12 CP (total)**

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

3rd Semester (winter semester)		CP		30 CP
Compulsory Elective	*Pattern Recognition (offered in German in winter term)*	5		**Advanced Machine Learning and AI** 2.-3. Semester **15 CP (total)**
	Computer Lab Pattern Recognition	5		
Compulsory Elective (16-20 CP)	Biophysical Chemistry	8		Specialisation **Spectroscopy and Imaging** 1.-3. Semester **37 CP (total)**
	Modern Optical Methods and Imaging	8		
	*Solar and Chemical Energy Conversion**	8		
	Physical Biology of the Cell	10		
	Chemometrics	6		
	Theoretical Spectroscopy	8		
	Machine Learning in Computational Chemistry	8		
	C) Sum of achieved CP for Specialisation			
	37 CP - (A + B + C) = CP Research Lab (12-16 CP)			
	Research Lab	12-16	x	
	planned CP Research Lab			
Compulsory Elective	Ethics and Epistemology	5	x	**Key Qualifications** 1.-3. Semester **12 CP (total)**
	Elective Modules	7		

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

4th Semester (summer semester)		CP		30 CP
Compulsory	Master Thesis	30	x	**Master Thesis** 4. Semester **30 CP**

Date:_____ Signature Student:_____

Signature Mentor:_____