Study Plan (AIMS)

Specialisation: Chemical Synthesis and Drug Design

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	
Basic Module choose 1 of 2 (4 CP)	Organometallic Chemistry	4		Specialisation **Chemical Synthesis and Drug Design** 1.-3. Semester **37 CP (total)**
Compulsory Elective (16-20 CP)	Advanced Inorganic Chemistry	8		
	Organic Synthesis Planning	4		
	Enzyme Engineering	10		
	Fundamentals of Protein Structure Analysis	10		
	Advanced Theoretical Chemistry	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)**

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		
Basic Module choose 1 of 2 (4 CP)	Reaction Mechanisms	4		Specialisation **Chemical Synthesis and Drug Design** 1.-3. semester **37 CP (total)**
Compulsory Elective (16-20 CP)	Catalysis	8		
	Biomolecular Modelling	8		
	B) Sum of achieved CP for Specialisation			
Compulsory Elective	Elective Modules	7		**Key Qualifications** 1.-3. Semester **12 CP (total)**

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)	Advanced Inorganic Chemistry	8		Specialisation **Chemical Synthesis and Drugs** 1.-3. Semester **37 CP (total)**
	Organic Synthesis Planning	4		
	Enzyme Engineering	10		
	Fundamentals of Protein Structure Analysis	10		
	Advanced Theoretical Chemistry	8		
	Machine Learning in Computational Chemistry	8		
	C) Sum of achieved CP for Specialisation			
	37 CP - (A + B + C) = CP Research Lab (13-17 CP)			
	Research Lab	13-17	x	
	planned CP Research Lab			
Compulsory Elective	Ethics and Epistemology	5	x	**Key Qualifications** 1.-3. Semester **12 CP (total)**
	Elective Modules	7		

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

Date:_____ Signature Student:_____

Signature Mentor:_____