

Studies Plan

Chimie moléculaire et biologique 2023-24

Analytical and bioanalytical chemistry

Courses			Master 1	Master 2	Exam Session	Exam	Credit	
Language	Code	Section	Teacher	Specialization	on p	l e p		
E	Methods in drug development CH-455 CGC		Heinis	2h		Win	Written	3
E	Physical and chemical analyses of materials CH-410 CGC		Roussel		2h	Sum	Written	3
E	Protein mass spectrometry and proteomics CH-419 CGC		Dayon		2h	Sum	Written	2

Biological chemistry & biophysics

Courses			Master 1	Master 2	Exam Session	Exam	Credit	
Language	Code	Section	Teacher	Specialization	on p	l e p		
E	Cellular signalling							
E	CH-411	CGC	Hovius	2h		Win	Written	2
E	Frontiers in chemical biology							
E	CH-412	CGC			2h	Sum	Written	3
E	Nanobiotechnology							
E	CH-413	CGC	Steinauer		2h 1h	Sum	Written	3
E	Photomedicine							
E	CH-448	CGC	Wagnières		2h	Sum	Oral	3

Block 3

Courses			Master 1	Master 2	Exam Session	Exam	Credit
Language	Code	Section	Teacher	Specialization	on p	l e p	
E	Project in molecular sciences Ia CH-492	CGC	Profs divers	6h	6h	Sum Win	During the semester 6
E	Project in molecular sciences Ib CH-491	CGC	Profs divers	16h	16h	Sum Win	During the semester 12
	HSS : Introduction to project SHS					Win	3
	HSS : Project SHS					Sum	3

Computational chemistry

Courses			Master 1	Master 2	Exam Session	Exam	Credit	
Language	Code	Section	Teacher	Specialization	on p	l e p		
E	Computational methods in molecular quantum mechanics							
E	CH-452	CGC	Bonella	2h 1h		Win	Oral	4
E	Understanding advanced molecular simulation							
E	CH-420	CGC	Smit		2h 1h	Sum	During the semester	4

Group 2

Courses			Master 1	Master 2	Exam Session	Exam	Credit
Language	Code	Section	Teacher	Specialization	on p	l e p	
E	AI for chemistry CH-457	CGC	Schwaller		1h 2h	Sum	During the semester 3
E	Artificial photosynthesis CH-426	CGC	Zakeeruddin	2h		Win	Oral 2
E	Chemistry of f elements CH-427	CGC	Mazzanti		2h	Sum	Written 2

	Chemistry of food processes						
E	ENG-435	CGC	Blank	2h	Sum	Written	2
	Food chemistry						
F	ENG-433	CGC	Richard	2h	Win	Written	2
	Fundamentals of biosensors and electronic biochips						
E	EE-515	EL		2h 1h	Win	Written	3
	Machine learning for physicists						
E	PHYS-467	PH	Zdeborová	2h 2h	Win	Written	4
	Molecular spectroscopy in chemistry						
E	CH-456	CGC	Boyarkine	2h	Win	Oral	2
	Nanomaterials						
E	MSE-477	MX	Tileli	2h 1h	Win	During the semester	3
	Organic electronic materials						
E	MSE-486	MX	Frauenrath	3h 1h	Sum	Written	4
	Physical chemistry of polymeric materials						
E	MSE-431	MX	Klok-Lermann	2h 1h	Sum	During the semester	3
	Polymer chemistry and macromolecular engineering						
E	MSE-437	MX	Klok	2h 1h	Sum	During the semester	3
	Risk management						
E	ENG-430	CGC	Meyer	2h	Sum	During the semester	2
	Supramolecular chemistry						
E	CH-424	CGC	Severin	2h	Win	During the semester	2

Group 4

Courses			Master 1	Master 2	Exam Session	Exam	Credit	
Language	Code	Section	TeacherSpecialization	p	l	e	p	
E	Project in molecular sciences II							
	CH-590	CGC	Profs divers	680h	680h	Sum Win	During the semester	30

Inorganic chemistry

Courses				Master 1	Master 2	Exam Session	Exam	Credit	
Language	Code	Section	Teacher	Specialization	p	l	e	p	
E	Catalysis for energy storage CH-421		CGC	Hu	2h		Win	During the semester	3
E	Catalyst design for synthesis CH-422		CGC	Hu	2h		Win	During the semester	2
E	Solid state chemistry and energy applications CH-450		CGC	Queen		2h	Sum	Oral	3

Master project

Courses			MP Autumn	MP Spring	Exam Session	Exam	Credit	
Language	Code	Section	TeacherSpecialization	p	l	e	p	
	Master project in Molecular & Biological Chemistry							
	CH-599	CGC	Profs divers	900h	900h	Sum Win	Oral	30

Organic chemistry

Courses			Master 1	Master 2	Exam Session	Exam	Credit
Language	Code	Section	TeacherSpecialization	p	l	e	p
E	Asymmetric catalysis for fine chemicals synthesis						
	CH-435	CGC	Waser	2h	Sum	During the semester	2
	Physical and computational organic						

<i>E</i>	chemistry CH-431	CGC		2h	Sum	Oral	2
<i>E</i>	Structure and reactivity CH-432	CGC	Cramer	2h	Win	Oral	3
<i>E</i>	Total synthesis of natural products CH-438	CGC	Zhu	2h	Win	Written	3

Physical chemistry

Courses			Master 1	Master 2	Exam Session	Exam	Credit
Language	Code	Section	Teacher	Specialization			
<i>E</i>	Molecular quantum dynamics CH-453	CGC	Vanicek	2h 1h	Sum	Oral	3
<i>E</i>	Optical methods in chemistry CH-417	CGC	Bostedt	2h 1h	Win	Written	3
<i>E</i>	Photochemistry I CH-442	CGC	Moser	2h	Win	Oral	2

Sustainability

Courses			Master 1	Master 2	Exam Session	Exam	Credit
Language	Code	Section	Teacher	Specialization			
<i>E</i>	Automated and data-driven laboratories CH-400	CGC	Miéville	2h	Win	During the semester	2
<i>E</i>	Sustainable chemicals manufacture: concepts/tools CH-480	CGC	Guillen Gosalbez Mitchell Pérez-Ramírez	2h 2h	Sum	Written	4
<i>E</i>	Sustainable chemistry and engineering in Industry CH-407	CGC	Biasi Brocklehurst Godineau Lovelie Gomez Nanchen Robvieux Waser	2h	Win	During the semester	2