

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	
Methods in drug development							
E	CH-455	CGC	Heinis	2h		Win	Written 3
Physical and chemical analyses of materials							
E	CH-410	CGC	Roussel		2h	Sum	Written 3
Protein mass spectrometry and proteomics							
E	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	
Cellular signalling							
E	CH-411	CGC	Hovius	2h		Win	Written 2
Frontiers in chemical biology							
E	CH-412	CGC	Aye		2h	Sum	Written 3
Nanobiotechnology							
E	CH-413	CGC	Steinauer		2h 1h	Sum	Written 3

Block 3

Courses			Master 1	Master 2	Exam Session	Exam	Credit
Language	Code	Section	Teacher	Specialization	on p	l e p	
Project in molecular sciences Ia							
E	CH-492	CGC	Profs divers	6h	6h	Sum Win	During the semester 6
Project in molecular sciences Ib							
E	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	
Computational methods in molecular quantum mechanics							
E	CH-452	CGC	Bonella	2h 1h		Win	Oral 4
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	
AI for chemistry							
E	CH-457	CGC	Schwaller		1h 2h	Sum	During the semester 3
Artificial photosynthesis							
E	CH-426	CGC	Zakeeruddin	2h		Win	Oral 2
Asymmetric catalysis for fine chemicals synthesis							
E	CH-435	CGC	Waser		2h	Sum	Oral 3
Chemistry of f elements							
E	CH-427	CGC	Mazzanti		2h	Sum	Written 2

E	Chemistry of food processes							
	ENG-435	CGC	Blank	2h	Sum	Written	2	
F	Food chemistry							
	ENG-433	CGC	Richard	2h	Win	Written	2	
E	Fundamentals of biosensors and electronic biochips							
	EE-515	EL		2h 1h	Win	Written	3	
E	Machine learning for physicists							
	PHYS-467	PH	Zdeborová	2h 2h	Win	Written	4	
E	Molecular spectroscopy in chemistry							
	CH-456	CGC_OR_CHIM	Boyarkine	2h	Win	Oral	2	
E	Nanomaterials							
	MSE-477	MX	Tileli	2h 1h	Win	During the semester	3	
E	Organic electronic materials							
	MSE-486	MX	Frauenrath	3h 1h	Sum	Written	4	
E	Photomedicine							
	CH-448	CGC	Wagnières	2h	Sum	Oral	2	
E	Physical chemistry of polymeric materials							
	MSE-431	MX	Klok-Lermann	2h 1h	Sum	During the semester	3	
E	Polymer chemistry and macromolecular engineering							
	MSE-437	MX	Klok	2h 1h	Sum	During the semester	3	
E	Risk management							
	ENG-430	CGC	Meyer	2h	Sum	During the semester	2	
E	Supramolecular chemistry							
	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	on p	l e p			
E	Project in molecular sciences II			680h	680h	Sum	During the semester	30
	CH-590	CGC	Profs divers			Win		

Inorganic chemistry

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

Master project

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

Organic chemistry

Courses			Master 1	Master 2	Exam Session	Exam	Credit	
Language	Code	Section	TeacherSpecialization	on p	l e p			
E	Physical and computational organic chemistry			2h		Sum	Oral	2
	CH-431	CGC	Cominboeuf					

	Structure and reactivity							
E	CH-432	CGC	Cramer	2h		Win	Oral	3
	Total synthesis of natural products							
E	CH-438	CGC	Zhu	2h		Win	Written	3

Physical chemistry

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

Sustainability

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