

## Studies Plan

### Génie chimique et biotechnologie 2024-25

#### Block 1

Courses			Master 1	Master 2	Exam Session	Exam	Credit
Language	Code	Section	Teacher	Specialization	o p	l e p	
<b>Diffusion and mass transfer</b>							
E	ChE-402	CGC	Agrawal	2h	1h	Win	Written 4
<b>Heterogeneous reaction engineering</b>							
E	ChE-403	CGC	Luterbacher	2h	1h	Win	Written 4
<b>Safety of chemical processes</b>							
E	ENG-431	CGC	Nanchen	2h		Win	Written 2

#### Block 3

Courses			Master 1	Master 2	Exam Session	Exam	Credit
Language	Code	Section	Teacher	Specialization	o p	l e p	
<b>Chemical engineering lab &amp; project</b>							
E	ChE-409	CGC	Luterbacher			4h	Sum During the 4 semester
<b>Chemical engineering product design</b>							
E	ChE-413	CGC	Sivula	4h		Win	During the 4 semester
<b>Process development</b>							
E	ChE-459	CGC	Gouveia Braz Maréchal Ribeiro Domingos	2h	6h	Sum	During the 8 semester
<b>HSS : Introduction to project</b>							
		SHS				Win	3
<b>HSS : Project</b>							
		SHS				Sum	3

#### Group 2

Courses			Master 1	Master 2	Exam Session	Exam	Credit
Language	Code	Section	Teacher	Specialization	o p	l e p	
<b>Automated and data-driven laboratories</b>							
E	CH-400	CGC	Miéville	2h		Win	During the 2 semester
<b>Bioprocesses and downstream processing</b>							
E	ChE-437	CGC	Crelrier Eyer Zinn		4h	Sum	Written 4
<b>Biotechnology lab (for CGC)</b>							
E	ChE-433	CGC	Pick		6h	Sum	During the 4 semester
<b>Catalysis for emission control and energy processes</b>							
E	ChE-410	CGC	Kröcher	2h	1h	Win	Written 3
<b>Catalysis for energy storage</b>							
E	CH-421	CGC	Hu	2h		Win	During the 3 semester
<b>Chemistry of food processes</b>							
E	ENG-435	CGC	Blank		2h	Sum	Written 2
<b>Entrepreneurship in food &amp; nutrition science</b>							
E	BIO-498	SV	Feige Lé Bur Van der Beek		2h 2h	Sum	During the 4 semester
<b>Food biotechnology</b>							
E	ENG-436	CGC	Sybesma		2h	Sum	Written 2
<b>Food chemistry</b>							
F	ENG-433	CGC	Richard	2h		Win	Written 2

	<b>Modelling and optimization of energy systems</b>							
E	ME-454	GM	Maréchal	2h	2h	Win	Oral	4
	<b>Nanobiotechnology</b>							
E	CH-413	CGC	Steinauer		2h 1h	Sum	Written	3
	<b>Nanomaterials for chemical engineering application</b>							
E	ChE-430	CGC	Buonsanti	2h	1h	Win	Oral	3
	<b>Organic electronic materials</b>							
E	MSE-486	MX	Frauenrath		3h 1h	Sum	Written	4
	<b>Pharmaceutical biotechnology</b>							
E	ChE-436	CGC	Pick	2h	1h	Win	Written	3
	<b>Physical and chemical analyses of materials</b>							
E	CH-410	CGC	Roussel		2h	Sum	Written	3
	<b>Physical chemistry of polymeric materials</b>							
E	MSE-431	MX	Klok-Lermann		3h 1h	Sum	During the semester	4
	<b>Polymer chemistry and macromolecular engineering</b>							
E	MSE-437	MX	Klok	2h	1h	Win	During the semester	3
	<b>Principles and applications of systems biology</b>							
E	ChE-411	CGC	Hatzimanikatis	2h	1h	Win	During the semester	3
	<b>Process intensification and green chemistry</b>							
E	ChE-408	CGC	Randall		2h 1h	Sum	Written	3
	<b>Risk management</b>							
E	ENG-430	CGC	Meyer		2h	Sum	During the semester	2
	<b>Selected topics in life sciences</b>							
E	BIOENG-430	SV	Mahul Mellier	2h		Win	Written	3
	<b>Solid state chemistry and energy applications</b>							
E	CH-450	CGC	Queen		2h	Sum	Oral	3
	<b>Sustainability and materials</b>							
E	MSE-341	MX	Abitbol		2h 1h	Sum	During the semester	3
	<b>Sustainable chemicals manufacture: concepts/tools</b>							
E	CH-480	CGC	Guillen Gosalbez Mitchell Pérez-Ramírez		2h 2h	Sum	Written	4
	<b>Sustainable chemistry and engineering in Industry</b>							
E	CH-407	CGC	Biasi Brocklehurst Godineau Lovelle Gomez Nanchen Robvieux Waser	2h		Win	During the semester	2
	<b>Synthetic biology</b>							
E	BIOENG-320	SV	Barth		2h 2h	Sum	Written	4
	<b>Thermodynamics of energy conversion and storage</b>							
E	ChE-414	CGC	Züttel		2h 1h	Sum	Written	3

#### Internship

	Courses			Master 1	Master 2	Exam Session	Exam	Credit	
Language	Code	Section	Teacher	Specialization	o p	l e p			
	<b>Engineering internship (Master in Chemical engineering and Biotechnology)</b>								
F	ChE-596	CGC	Profs divers		680h	680h	Sum Win	During the semester	30

#### Master project

Courses			MP Autumn	MP Spring	Exam Session	Exam	Credit
Language Code	Section	Teacher	Specialization	h	h		
<b>Master project in Chemical Engineering &amp; Biotechnology</b>							
ChE-599	CGC	Profs divers		900h	900h	Sum Win	30