



Diplôme d'ingénieur chimie-biotechnologie "Chembiotech"

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Contact

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Langue du parcours	Français		
ECTS	180 ECTS		
Volume horaire			
TP : 0h	TD : 0h	CI : 0h	CM : 0h
Formation initiale	Oui		
Formation continue	Non		
Apprentissage	Non		
Contrat de professionnalisation	Non		

Diplôme d'ingénieur ChembioTech - 1ère année

Semestre 1 - ChembioTech

	ECTS	CM	CI	TD	TP	TE	Stage
UE : Fundamental biochemistry and biology I	6 ECTS						
Prokaryotic transcription		10 h			1 h		
Eukaryotic transcription for CBT							
Translation		10 h		2 h	1 h		
Microbiology		12 h		4 h	1 h		
Introduction to biochemistry		10 h					
UE : Structural Methods and informatics for biological chemistry I	6 ECTS						
Structural biology		12 h		6 h			
Statistics							
Electronics & Biosensors		12 h					
Analytical Biochemistry for CBT							
UE : Engineering Sciences I	6 ECTS						
Thermodynamic							
Phenomen of transports							
Kinetics							
UE : Organic, inorganic and analytical chemistry - Fundamentals I	6 ECTS						
Orga & Inorga chemistry		8 h		2 h	1 h		
Spectroscopies for chemistry and proteins		12.2 h		4.3 h			
UE : Humanities, Economy & Social Sciences I	3 ECTS						
English							
Deutsch							
Health and safety for CBT							
Communication		2 h		6 h			
UE : Practicals I	3 ECTS						
Instrumentation essentials		14 h		14 h	4 h		
Instrumentation & Biochemistry Practicals					52 h		

Semestre 2 - ChembioTech

	ECTS	CM	CI	TD	TP	TE	Stage
UE : Fondamentals of Biology II	3 ECTS						
Molecular biotechnology		20 h		6 h	6 h		
Cellular biology		20 h		4 h	1 h		
UE : Engineering Sciences II	3 ECTS						
Computer sciences for biotechnologies		6 h		12 h	12 h		
Bioinformatics		14 h		10 h	2 h		
UE : Organic, inorganic and analytical chemistry - Fundamentals II	6 ECTS						
Bio organic chemistry		8 h		2 h	1 h		
Organic reactivity I							
Life elements		9.3 h		1.2 h			
UE : Humanities, Economy & Social Sciences II	6 ECTS						
English							
Deutsch							
Economy & Industries				12 h			
Project management		10 h					
Professional project II		4 h		1 h			
Green chemistry and ecoprocesses							
Reach norms & rights of environnement							
Sustainable development for industrial chemistry							
UE PR2 : Practicals II	12 ECTS						
Genetic engineering practicals					35 h		
Enzymology practicals		10 h		8 h	27 h		
Organic chemistry							
Analytical chemistry							
Microbiology practicals for CBT							

Diplôme d'ingénieur ChembioTech - 2ème année

Semestre 3 - ChembioTech

	ECTS	CM	CI	TD	TP	TE	Stage
UE : Applied molecular biology and biochemistry III	9 ECTS						
Immunology		20 h					
Immunotechnology		12 h					
Genetic engineering		26 h		14 h	8 h		
Metabolism & Biotechnologies for CBT		15 h		4 h			
UE : Organic, inorganic and analytical chemistry - applications III	3 ECTS						
Organic reactivity II							
Analytical and bioanalytical chemistry		16.4 h		4.6 h			
UE : Engineering Sciences III	6 ECTS						
Molecular modeling for CBT		6 h		16 h			
Experimental design		8 h					
Industrial mission							
UE : Humanities, Economy & Social Sciences III	6 ECTS						
English							
Deutsch							
Industrial finances		4 h		8 h			
BioEthics		10 h					
Quality		12 h					
UE PR4 : Practicals III	3 ECTS						
Bioconjugated chemistry							
Organic Chemistry					28 h		
UE : Internship I	3 ECTS						
Internship 1st year							

Semestre 4 - ChembioTech

	ECTS	CM	CI	TD	TP	TE	Stage
UE : Organic, inorganic and analytical chemistry - Applications IV	6 ECTS						
Bio-inorganic chemistry		11 h					
Organic reactivity III							
Supported synthesis of biomolecules		11 h		3.5 h			
UE : Engineering Sciences IV	6 ECTS						
Process engineering for chemistry		10 h		5.8 h			
Process engineering for Biotechnologies		8 h		8 h			
Industrial mission							
UE : Humanities, Economy & Social Sciences IV	6 ECTS						
Projects in Bioethics				4 h	9 h		
English							
Deutsch							
UE PR 4 : Practicals IV	12 ECTS						
DSP Protein purification practicals (CBT)							
Cell culture practicals							
Process engineering							
Organic chemistry							
Analytical and bioanalytical chemistry							

Diplôme d'ingénieur Chémbiotech - 3ème année

Semestre 5 - Chémbiotech

	ECTS	CM	CI	TD	TP	TE	Stage
Red Chémbiotech I	9 ECTS						
Structures macromoléculaires et découvertes de médicaments		14 h			17 h		
Retrosynthesis for pharma and agro molecules		8 h					
Chemical protein synthesis		8 h					
Toxicologie		18 h					
Drug discovery and development : case studies			25.5 h	1.5 h			
Human and molecular genetics		24 h					
Green Chémbiotech I	6 ECTS						
Ecotoxicology		8 h					
Chimie des sucres et valorisation de la biomasse			24 h				
Bioremédiation		8 h					
Bioplastics							
Recycling for biofuels		12.8 h					
ES : Humanities, Economy & Social sciences V	3 ECTS						
Intellectual property		16 h					
Professionnal project 3A CBT							
English							
Deutsch / Français							
PR : Projects	6 ECTS						
Project Chémbiotech					200 h		
UE : Internship II	6 ECTS						
2nd year internship							

Semestre 6 - Chémbiotech

	ECTS	CM	CI	TD	TP	TE	Stage
Engineer internship CBT	30 ECTS						
Engineer internship CBT							