

Faculty of Sciences



CHIM2

Licence en sciences chimiques (Diploma of the Second Cycle (Licence) in Chemical Sciences)

**Programme management**

CHIM Département de chimie

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Admission procedure

The regular conditions and admission procedures are detailed on the web page "Access to Studies" :

<http://www.ucl.ac.be/etudes/libres/acces.html>**Programme content****"Options" and "free choice" courses**

Registration for the options and free choice courses must be approved by the Chemistry Department before the end of the third week of each quadrimester. This registration will then be handed in to the secretary's office of the Faculty and the jury secretary. The specific practical procedures relating to the "licence" options and the thesis, not detailed below, are established by the Chemistry Department and made known to the students.

CHIM21 First year

1. Compulsory courses

<u>SC2140</u>	Questions of religious sciences[15h] (1 credits) (in French)	José Reding
<i>This course will be followed in the 1st or 2nd year.</i>		
<u>CHIM2130</u>	Inorganic chemistry[45h] (4.5 credits) (in French)	Michel Devillers
<u>CHIM2131</u>	Exercices in inorganic chemistry[44h] (3 credits) (in French)	Michel Devillers
<u>CHIM2140</u>	Organic chemistry[45h] (4.5 credits) (in French)	Istvan Marko, Olivier Riant
<u>CHIM2141</u>	Exercices de chimie organique[120h] (7.5 credits) (in French)	Jean-François Gohy, Olivier Riant (coord.)
<u>CHIM2151</u>	Analytical chemistry I[30h] (3 credits) (in French)	Yann Garcia (coord.), Paul Rouxhet
<u>CHIM2152</u>	Exercices in analytical chemistry I[44h] (3 credits) (in French)	Yann Garcia (coord.), Paul Rouxhet
<u>CHIM2154</u>	Chimie analytique II[30h] (3 credits) (in French)	Yann Garcia (coord.), Paul Rouxhet
<u>CHIM2155</u>	Exercices in analytical chemistry II[62h] (3.5 credits) (in French)	Yann Garcia (coord.), Paul Rouxhet
<u>CHIM2161</u>	Physical chemistry and physicochemical calculus 1st part: thermodynamics, 2d part) kinetics[67.5h+29h] (9 credits) (in French)	Daniel Peeters, Jacques Vandooren
<u>CHIM2162</u>	Methods of physical chemistry[76h] (4.5 credits) (in French)	Daniel Peeters, Jacques Vandooren
<u>CHIM2230</u>	Metabolic biochemistry[30h] (3 credits) (in French)	Robert Crichton
<u>CHIM2231</u>	Exercices in metabolic biochemistry A[30h] (2 credits) (in French)	Robert Crichton, Jacques Fastrez, Yves-Jacques Schneider, Patrice Soumillion

The students who do not take or do not pass the oral expression test in English will do the following course :

<u>ANGL2463</u>	English - Interactive Communication Skills[30h] (2 credits)	Colleen Starrs
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2. Options

The students will follow, among others, an option chosen from the list below :

<u>CHIM2135</u>	Complements of inorganic chemistry[22.5h] (2.5 credits) (in French)	Michel Devillers
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	French)	
<u>CHIM2181</u>	Quantum chemistry I[22.5h+0h] (2 credits) (in French)	Daniel Peeters
<u>CHIM2191</u>	Chimie organique de synthèse I[22.5h+0h] (2.5 credits) (in French)	Jacqueline Marchand
<u>CHIM2195</u>	Introduction to polymer chemistry[22.5h] (2.5 credits) (in French)	Jean-François Gohy
<u>CHIM2201</u>	Applied chemical kinetics[22.5h+0h] (2.5 credits) (in French)	Jacques Vandooren
<u>CHIM2211</u>	Combustion physicochemistry I[22.5h+0h] (2.5 credits) (in French)	Jacques Vandooren
<u>CHIM2251</u>	Physical organic chemistry I[22.5h+0h] (2.5 credits) (in French)	Olivier Riant
<u>CHIM2321</u>	Applied organic chemistry I[22.5h+0h] (2 credits) (in French)	Jean-Louis Habib Jiwan, Jacqueline Marchand
<u>CHIM2340</u>	Radio cristallography[22.5h+15h] (2.5 credits) (in French)	Jean-Paul Declercq
	<i>[partim : 22.5 hours]</i>	
<u>CHIM2380</u>	Complements of biochemistry I[22.5h] (2.5 credits) (in French)	Robert Crichton, Yves-Jacques Schneider
<u>CHIM2382</u>	Enzymology and biotechnology I[22.5h] (2.5 credits) (in French)	Robert Crichton, Jacques Fastrez
<u>CHIM2471</u>	Nuclear chemistry[22.5h+0h] (2 credits) (in French)	Jean Ladrière
	<i>[partim : 22.5 hours]</i>	

The seminars relating to the courses are not given in the first year.

CHIM22 Second year

A. Thesis

The students will present a thesis (CHIM 2999) on a topic relating to general chemistry, analytical chemistry or physical chemistry. The choice of a thesis director must be approved by the Chemistry Department by the end of the third week of the 1st quadrimester of the 2nd year of studies. The preparation of the thesis is equivalent to around 600 course attendance hours. The readers of the thesis are appointed by the Chemistry Department one month before the end of the 2nd quadrimester of the second year of studies. The list of the thesis readers will be communicated to the jury secretary.

B. Courses

1. Philosophical teachings

<u>SC2001</u>	Introduction to contemporary philosophy[30h] (2 credits) (in French)	Laurent de Brie
	<i>or</i>	
<u>SC2220</u>	Philosophy of science[30h] (2 credits) (in French)	Michel Ghins
	<i>or</i>	
<u>FILO2003</u>	Ethics in the Natural Sciences[15h+15h] (2 credits) (in French)	Philippe Baret, Bernard Feltz, Thierry Hance

2. Course on Religious Sciences

<u>SC2140</u>	Questions of religious sciences[15h] (1 credits) (in French)	José Reding
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This course will be followed according to choice, in the 1st or 2nd year.

3. Language course

<u>CHIM2998</u>	Thesis tutorial[30h] (2 credits) (in English)	Yves-Jacques Schneider (coord.), Annick Sonck (coord.)
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4. Orientations

The students will have to follow a minimum of 225 hours of courses and carry out a piece of research work in one of the five following orientations : biochemistry, inorganic and analytical chemistry, organic chemistry, physical chemistry or macromolecular chemistry. The 225 hours of courses will obligatorily comprise all of the courses which constitute the core syllabus of the orientation in which the thesis is carried out, excluding those courses already followed in the first year. The students who do a thesis in an interdisciplinary subject may, with the agreement of the Department, obtain derogations for some of the compulsory courses.

a. Biochemistry orientation

<u>CHIM2380</u>	Complements of biochemistry I[22.5h] (2.5 credits) (in French)	Robert Crichton, Yves-Jacques Schneider
<u>CHIM2381</u>	Complements of biochemistry II[22.5h] (2.5 credits) (in French)	Robert Crichton (coord.), Pierre De Meyts, Louis Hue
<u>CHIM2382</u>	Enzymology and biotechnology I[22.5h] (2.5 credits) (in French)	Robert Crichton, Jacques Fastrez

<u>CHIM2383</u>	Enzymology and biotechnology II[22.5h+0h] (2.5 credits) (in French)	Robert Crichton, Pierre De Meyts, Patrice Soumillion
<u>CHIM2195</u>	Introduction to polymer chemistry[22.5h] (2.5 credits) (in French)	Jean-François Gohy
<i>one of the two following courses, according to choice :</i>		
<u>BIOL2137</u>	Molecular genetics[30h+15h] (3.5 credits) (in French)	Jean Delcour, Bernard Hallet
<u>GEMO2110</u>	Molecular and medical genetics[30h] (2 credits) (in French)	Christine Dumoulin
b. Inorganic and Analytical Chemistry orientation		
<u>CHIM2135</u>	Complements of inorganic chemistry[22.5h] (2.5 credits) (in French)	Michel Devillers
<u>CHIM2223</u>	Analytical chemistry I[22.5h] (2.5 credits) (in French)	Patrick Bertrand, Yann Garcia (coord.)
<u>CHIM2224</u>	Analytical chemistry II[22.5h] (2.5 credits) (in French)	Yann Garcia
<u>CHIM2242</u>	Chemistry of inorganic solids[22.5h+0h] (2.5 credits) (in French)	Michel Devillers
<u>CHIM2291</u>	Complements of physical chemistry[22.5h+0h] (2.5 credits) (in French)	Daniel Peeters
<u>CHIM2195</u>	Introduction to polymer chemistry[22.5h] (2.5 credits) (in French)	Jean-François Gohy
c. Organic Chemistry orientation		
<u>CHIM2191</u>	Chimie organique de synthèse I[22.5h+0h] (2.5 credits) (in French)	Jacqueline Marchand
<u>CHIM2192</u>	Chimie organique de synthèse II[22.5h+0h] (2.5 credits) (in French)	Olivier Riant
<u>CHIM2321</u>	Applied organic chemistry I[22.5h+0h] (2 credits) (in French)	Jean-Louis Habib Jiwan, Jacqueline Marchand
<u>CHIM2322</u>	Applied organic chemistry[22.5h+0h] (2.5 credits) (in French)	Istvan Marko
<u>CHIM2251</u>	Physical organic chemistry I[22.5h+0h] (2.5 credits) (in French)	Olivier Riant
<u>CHIM2310</u>	Photochemistry[22.5h] (2.5 credits) (in French)	Jean-Philippe Soumillion
<u>CHIM2195</u>	Introduction to polymer chemistry[22.5h] (2.5 credits) (in French)	Jean-François Gohy
d. Physical Chemistry orientation		
<u>CHIM2181</u>	Quantum chemistry I[22.5h+0h] (2 credits) (in French)	Daniel Peeters
<u>CHIM2202</u>	Applied polymer chemistry II[22.5h+0h] (2.5 credits) (in French)	Jacques Vandooren
<u>CHIM2281</u>	Complements of spectroscopy[22.5h] (2.5 credits) (in French)	Jean-Louis Habib Jiwan
<u>CHIM2291</u>	Complements of physical chemistry[22.5h+0h] (2.5 credits) (in French)	Daniel Peeters
<u>CHIM2195</u>	Introduction to polymer chemistry[22.5h] (2.5 credits) (in French)	Jean-François Gohy
e. Macromolecular orientation		
<u>CHIM2202</u>	Applied polymer chemistry II[22.5h+0h] (2.5 credits) (in French)	Jacques Vandooren
<u>CHIM2261</u>	Chimie macromoléculaire I[22.5h] (2.5 credits) (in French)	Jean-François Gohy
<u>CHIM2262</u>	Macromolecular chemistry II[22.5h] (2.5 credits) (in French)	Jean-François Gohy
<u>MAPR2392</u>	Physics of polymeric materials[30h+30h] (5 credits) (in French)	Christian Bailly, Sophie Demoustier, Jacques Devaux, Pierre Godard, Alain Jonas, Roger Legras (coord.), Bernard Nysten
<u>MAPR2452</u>	Physical statistic and macromolecular physics and chemistry[30h+15h] (4 credits) (in French)	Christian Bailly, Sophie Demoustier, Jacques Devaux, Pierre Godard, Alain Jonas, Roger Legras (coord.), Bernard Nysten

4. Options

Besides the courses which constitute the core syllabus specific to each orientation, the students will choose a certain number of options with a view to attaining a global minimum timetable volume of 225 hours. These courses will be selected :

- either from among the courses listed on the core syllabus of the other orientations,
- or from the options listed below,
- or, in agreement with their thesis director, from the other courses featuring on the University programmes.

The choice cannot, in any circumstances, include a course which the student has already been examined on in the first year. The students are highly recommended to extend their choice to the courses of the other orientations in the second year.

<u>CHIM2182</u>	Quantum chemistry II[22.5h+0h] (2.5 credits) (in French)	Daniel Peeters
<u>CHIM2201</u>	Applied chemical kinetics[22.5h+0h] (2.5 credits) (in French)	Jacques Vandooren
<u>CHIM2211</u>	Combustion physicochemistry I[22.5h+0h] (2.5 credits) (in French)	Jacques Vandooren
<u>CHIM2212</u>	Combustion physicochemistry II[22.5h+0h] (2.5 credits) (in French) ▲	N.
<u>CHIM2252</u>	Chimie organique physique II[22.5h+0h] (2.5 credits) (in French) ▲	N.
<u>CHIM2282</u>	Complements of NMR[22.5h+0h] (2.5 credits) (in French)	Jean-Louis Habib Jiwan, André Schanck
<u>CHIM2292</u>	Complements of groups theory and structural chemistry[22.5h+0h] (2.5 credits) (in French)	Jean-Paul Declercq
<u>CHIM2340</u>	Radio cristallography[22.5h+15h] (2.5 credits) (in French)	Jean-Paul Declercq
	<i>[partim : 22.5 hours]</i>	
<u>CHIM2471</u>	Nuclear chemistry[22.5h+0h] (2 credits) (in French)	Jean Ladrière
	<i>[partim : 22.5 hours]</i>	
<u>CHIM2472</u>	Radiochemistry[22.5h] (2.5 credits) (in French)	Jean Ladrière
<u>BRTE2201</u>	Human and animal toxicology[22.5h] (2 credits) (in French)	Alfred Bernard
<u>BIOL2131</u>	Microbiology[50h+15h] (8.5 credits) (in French)	Claude Bragard, Jacques Mahillon
	<i>[partim : 30-15 hours]</i>	
<u>BIOL2134</u>	Animal physiological biochemistry[15h] (2.5 credits) (in French)	Yves-Jacques Schneider
<u>BIOL2211</u>	Microbial genetics[30h+15h] (3.5 credits) (in English)	Anne-Marie Corbisier, Bernard Hallet
<u>BIR1319</u>	Colloïdal and surface chemistry[30h] (2.5 credits) (in French)	Paul Rouxhet
<u>BRNA2103</u>	Chemistry of solids[37.5h+0h] (3 credits) (in French)	Eric Gaigneaux
<u>BRMC2101</u>	Genetic engineering[22.5h+15h] (3 credits) (in French)	Marc Boutry
<u>BIRC2103</u>	Molecular biology and concepts of genetic engineering[22.5h+22.5h] (3.5 credits) (in French)	Marc Boutry, François Chaumont
<u>ENVI3012</u>	Pollution de l'environnement[60h+15h] (6 credits) (in French)	Bruno Delvaux, Patrick Gerin (coord.), Nathalie Kruyts (supplée Bruno Delvaux), Claude Ronneau
<u>BRNA2103</u>	Chemistry of solids[37.5h+0h] (3 credits) (in French)	Eric Gaigneaux