

Faculty of Sciences



BIOL2

Licence en sciences biologiques (Diploma of the Second Cycle (Licence) in Biological Sciences)



Programme management

BIOL Département de biologie

Responsable académique :Thierry Hance

Contact :Isabelle Magnoli

Tél. 010479425

magnoli@biol.ucl.ac.be

Study objectives

Living matter is studied from the perspective of time (evolution) and space (biogeography), in its diversity (from micro-organisms to man), and on its different levels of organisation (from molecular biology to ecology). The training programme takes the form of lectures, seminars, practical tasks, personal pieces of work and periods of field experience. A project involving personal research is carried out in the context of the end of course thesis. Job possibilities are to be found mainly in the form of secondary school teaching and biomedical and biotechnological research within organisations concerned by the preservation and management of the environment.

Admission conditions

The second cycle of university studies ("licence") in Biology is accessible to holders of the diploma of the first cycle of university studies ("candidature") in Biological Sciences, as well as to "candidats" in Medical or Biomedical Sciences, or another "candidature" diploma recognised as being equivalent, subject to a modified programme. The equivalence is determined by the Academic Secretary of the Faculty of Sciences.

Admission procedure

The regular conditions and admission procedures are detailed in the "General information" section of the WEB page : <http://www.ucl.ac.be/etudes/programme.html>

General structure of the programme

The first year of the programme (BIOL21) comprises a core syllabus combining the two orientations : molecular, cellular and human biology (BIOL21a), and the biology of organisms and populations(BIOL21b). In each orientation, the student is encouraged to choose between two courses offered alternatively. The second year comprises a core syllabus, an end of course thesis, menus following five orientations [molecular and cellular biology (BIOL22.1), human biology (BIOL22.2), animal biology (BIOL22.3), vegetal biology (BIOL22.4), ecology (BIOL22.5)], and 60 hours of options (40 hours in BIOL22.1) to be chosen in concertation with the promoter of the thesis. The student will choose the promoter for his thesis in agreement with the Department ; if the promoter is not a member of the BIOL Department or is not approved by the Interfaculty Committee of Human Biology, a member of the BIOL Department will have to act as garantor.

Programme content

BIOL21 First year

Reminder : to be eligible for enrolment for the study year, the student must have followed the apprenticeship in Marine Biology (BIOL1200)

Core courses

SC2140 Questions of religious sciences[15h] (1 credits)1q (in French) José Reding

This course will be followed in the 1st or 2nd year of the " licence", according to choice.

ANGL2464 Anglais-expression orale pour les biologistes[30h] (2 credits)1+2q Colleen Starrs

This course is followed by students who have either failed or who have not done the test in oral expression in English.

<u>BIOL2113</u>	A préciser (in French)	
<u>BIOL2121</u>	A préciser (in French)	
<i>partim : [45h-15h]</i>		
<u>CHIM2190</u>	A préciser (in French)	
<u>BIOL2137</u>	A préciser (in French)	
<i>The students who have chosen the "biology of organisms and populations" orientation will not do the practical exercises.</i>		
<u>BIOL2150</u>	A préciser (in French)	
<u>BIOL2180</u>	A préciser (in French)	
<u>VETE1300</u>	Integrated Seminars[25h] (2 credits)2q (in English)	Anne-Marie Corbisier, Philippe Denis, André Moens, René Rezsóhazy (coord.), Yves-Jacques Schneider, Colleen Starrs, Renate Wesselingh
a) Molecular, Cellular and Human Biology		
<u>BIOL2131A</u>	A préciser (in French)	
<u>BIOL2133</u>	A préciser (in French)	
<u>BIOL2161A</u>	A préciser (in French)	
<u>BIOL2134</u>	A préciser (in French)	
<u>BIOL2138</u>	A préciser (in French)	
<u>BIOL2139</u>	A préciser (in French)	
b) Biology of Organisms and Populations		
<u>BIOL2131B</u>	A préciser (in French)	
<u>BIOL2141</u>	A préciser (in French)	
<u>BIOL2191</u>	A préciser (in French)	
<u>GEOG2160</u>	A préciser (in French)	
<i>partim : (30 hours)</i>		
<u>BIOL2193</u>	A préciser (in French)	
<u>BIOL2183</u>	A préciser (in French)	
<i>or</i>		
<u>BIOL2181</u>	A préciser (in French)	
<u>BIOL2142</u>	A préciser (in French)	
<u>BRAI2101</u>	Population and quantitative genetics[52.5h+0h] (4 credits)1q (in French)	Philippe Baret, Xavier Draye
<i>[partim : 15 hours]</i>		
Special programme for the candidates in Medical Sciences		
Orientation a) (Molecular, Cellular and Human Biology)		
<u>BIR1130</u>	Introduction to Earth sciences[45h+30h] (6 credits)2q (in French)	Joseph Dufey, Philippe Sonnet
<i>[partim : 30 hours]</i>		
<u>BIO1231</u>	Complements of animal biology[75h+70h] (12 credits)1+2q (in French)	Thierry Hance, Bernard Knoops, Claude Remacle (coord.), Philippe van den Bosch Sanchez de Aguilar, Hans Van Dyck
<i>[partim : A) Invertebrates 30 hours]</i>		
<u>BIO1312</u>	Field work[0h+75h] (4 credits)2q (in French)	André Lejeune (coord.), Daniel Tyteca
<u>BIO1241</u>	Complements of plant biology[55h+30h] (7 credits)1+2q (in French)	Jean-Marie Kinet, Stanley Lutts
<i>partim : A [22.5 hours-15 hours] and C [22.5 hours-15 hours]</i>		
<u>MAT1275</u>	Statistics in the natural sciences[30h+30h] (5 credits)1q (in French)	Éric Le Boulengé
<i>or</i>		
<u>VETE1262</u>	Biostatistics[45h+45h] (8 credits)1q (in French)	N.
<u>MAT1111</u>	General Mathematics[90h+60h] (13 credits) (in French)	Marielle Cherpion, Camille Debiève, Patrick Habets, Enrico Vitale
<u>BIO1251</u>	Introductory ecology[60h+15h] (6 credits)2q (in French)	Michel Baguette (coord.), Thierry Hance, Anne-Laure Jacquemart, Éric Le Boulengé, Hans Van Dyck, Renate Wesselingh
<u>BIOL2150</u>	A préciser (in French)	
<i>This course will not be followed by the students who have chosen the VETE1362 course.</i>		
<u>BIOL2180</u>	A préciser (in French)	
<u>BIOL2137</u>	A préciser (in French)	
<u>BIOL2138</u>	A préciser (in French)	

<u>VETE1300</u>	Integrated Seminars[25h] (2 credits)2q (in English)	Anne-Marie Corbisier, Philippe Denis, André Moens, René Rezsóhazy (coord.), Yves-Jacques Schneider, Colleen Starrs, Renate Wesselingh
<u>ANGL2464</u>	Anglais-expression orale pour les biologistes[30h] (2 credits)1+2q	Colleen Starrs

This course is followed by the students who have failed or who have not done the oral expression test in English.

BIOL22 Second year

Core courses

<u>SC2001</u>	Introduction to contemporary philosophy[30h] (2 credits)2q (in French)	Mark Hunyadi
<i>or</i>		
<u>SC2220</u>	Philosophy of science[30h] (2 credits)2q (in French)	Michel Ghins
<i>or</i>		
<u>FILO2003</u>	Ethics in the Natural Sciences[15h+15h] (2 credits)2q (in French)	Philippe Baret, Bernard Feltz, Thierry Hance
<u>BIOL2201</u>	Biological evolution[30h] (2 credits)1q (in French)	Anne-Marie Corbisier, Thierry Hance
<u>BIOL2998</u>	Thesis tutorial[30h] (2 credits)1q (in English)	Anne-Marie Corbisier, Stanley Lutts, Annick Sonck
<u>SC2140</u>	Questions of religious sciences[15h] (1 credits)1q (in French)	José Reding

This course will be followed in the 1st or 2nd year of the "licence," according to choice.

1. Molecular and Cellular Biology

The students will choose a minimum of 200 hours from the courses listed below, completed by 40 hours of options, in concertation with their thesis promoter.

<u>BIOL2211</u>	Microbial genetics[30h+15h] (3.5 credits)2q (in English)	Anne-Marie Corbisier, Bernard Hallet
<u>BIOL2212</u>	Development genetics[30h+15h] (3.5 credits)1q (in French)	René Rezsóhazy
<u>BIOL2222</u>	Cytophysiologie[30h+30h] (4 credits)1q (in French)	Claude Remacle, Yves-Jacques Schneider
<u>BRMC2101</u>	Genetic engineering[22.5h+15h] (3 credits)2q (in French)	Marc Boutry
<u>BIOL2223</u>	Neurobiology[30h] (3 credits)1q (in French)	Bernard Knoops, Jean-Noël Octave, Philippe van den Bosch Sanchez de Aguilar
<u>BIOL2226</u>	Cellular pharmacology[30h] (3 credits)1q (in French)	Yves-Jacques Schneider
<u>BIOL2283</u>	Plant molecular and cellular biology[30h+15h] (3.5 credits)1q (in French)	François Chaumont
<u>BIOL2284</u>	Animal molecular and cellular biology[30h+15h] (3.5 credits)1q (in French)	Bernard Knoops, René Rezsóhazy
<u>BIOL2285</u>	Bacterial molecular and cellular biology[30h+15h] (3.5 credits)1q (in French)	Bernard Hallet, Pascal Hols
<u>BIOL2286</u>	Genomics[45h+30h] (7.5 credits)2q (in French)	François Chaumont, Françoise Foury, Pascal Hols, Bernard Knoops, René Rezsóhazy
<u>BIOL2272</u>	Parasitology[15h+15h] (2.5 credits)1q (in French)	Frederik Opperdoes
<u>CHIM2382</u>	Enzymology and biotechnology I[22.5h] (2.5 credits) 1q (in French)	Jacques Fastrez

2. Human Biology

General Pathology [60 h]

The courses which are grouped together under this heading will be the object of a common exam.

Courses situated at UCL- Bruxelles

<u>MED1300</u>	Basic pathology and introduction to medical semeiology[30h] (3 credits)2q (in French)	Pierre Courtoy
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<u>FARM2290</u>	A préciser (in French)	
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Pharmacology and General Toxicology (30h)

The courses which are grouped together under this heading will be the object of a common exam

Courses taught at UCL-Bruxelles

<u>PHAR2161</u>	A préciser (in French)	
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or

<u>PHAR1230</u>	Pharmacologie générale[30h] (3 credits)2q (in French)	Jean-Marie Maloteaux
<u>FARM2272</u>	Toxicology[30h] (3 credits)1q (in French)	Pedro Buc Calderon

[partim : 15 hours]

or

Courses taught in Louvain-la-Neuve

BRTE2201 Human and animal toxicology[22.5h] (2 credits)1q (in French) Alfred Bernard

VIDE1234 A préciser (in French)

Biochemical and Cellular Regulations and their Pathologies

(90 hours, according to choice; certain subjects may be the object of a common exam)

Courses taught at UCL-Bruxelles

BCMM2140 Biologie cellulaire et moléculaire des régulations hormonales[30h] (3 credits)1q (in French) Stefan Constantinescu, Frédéric Lemaigre

BCHM2120 Compléments de biochimie[30h] (2 credits)2q (in French) Luc Bertrand, Mark Rider (coord.)

BCMM2130 Biochemistry of Metabolic Diseases[30h] (2 credits)1q (in French) Marie-Cécile Nassogne (coord.), Marie-Françoise Vincent

MIGE3140 Advanced Immunology[30h] (3 credits) (in French) Pierre Coulie (coord.), Jean-Paul Coutelier, Dominique Latinne, Jean-Christophe Renault, Benoît Van den Eynde, Pierre van der Bruggen

Courses taught in Louvain-la-Neuve

BIOL2226 Cellular pharmacology[30h] (3 credits)1q (in French) Yves-Jacques Schneider

BRTE2201 Human and animal toxicology[22.5h] (2 credits)1q (in French) Alfred Bernard

BIOL2222 Cytophysiology[30h+30h] (4 credits)1q (in French) Claude Remacle, Yves-Jacques Schneider

BIOL2284 Animal molecular and cellular biology[30h+15h] (3.5 credits)1q (in French) Bernard Knoop, René Rezsöhazi

CHIM2381 Complements of biochemistry II[22.5h] (2.5 credits) 1q (in French) Yves-Jacques Schneider

3. Animal Biology

BIOL2161 A préciser (in French)

[partim : 30 hours-15 hours]

BIOL2133 A préciser (in French)

BIOL2287 Comparative animal physiology and morphology[60h+45h] (11 credits)1q (in French) Jérôme Mallefet, Claude Remacle

4. Vegetal Biology

BIOL2252 Plant biotechnology[20h+10h] (3 credits)1q (in French) Stanley Lutts

BIOL2281 Plant's interaction with environment[30h+15h] (3.5 credits)2q (in French) Henri Batoko, Stanley Lutts

BIOL2283 Plant molecular and cellular biology[30h+15h] (3.5 credits)1q (in French) François Chaumont

BIOL2282 Biologie du développement végétal[45h+30h] (6 credits)1q (in French) Henri Batoko, François Chaumont, Stanley Lutts

BRMC2101 Genetic engineering[22.5h+15h] (3 credits)2q (in French) Marc Boutry

5. Ecology

BIOL2261 Evolutionary ecology[30h] (3 credits)1q (in French) Renate Wesselingh

BIOL2262 Synecology[30h+30h] (4.5 credits)1q (in French) Thierry Hance, Anne-Laure Jacquemart

BIOL2263 Biomes et biosphère[30h+40h] (5.5 credits)2q (in French) Michel Baguette, Thierry Hance, Anne-Laure Jacquemart, Éric Le Boulengé, Hans Van Dyck, Renate Wesselingh (coord.)

BREF2105 Phytosociology[15h+30h] (3.5 credits)2q (in French) Freddy Devillez, Anne-Laure Jacquemart

BIOL2265 experimental ecology[40h] (3 credits) (in French) Michel Baguette, Éric Le Boulengé

Options

VETE1230 Domestic Animals Ethology[30h+15h] (5 credits)1q (in French) Marc Vandenhede

BIOL2275 Marine biology[30h] (2.5 credits)1q (in French) Jérôme Mallefet

BRTE2201 Human and animal toxicology[22.5h] (2 credits)1q (in French) Alfred Bernard

BIOL2276 Complements of marine biology[22.5h] (2 credits)2q (in French) Jean-François Rees

BRPP2102 Entomology applied to agriculture[45h+15h] (5 credits) (in French) Claude Bragard (coord.), Jean-Claude Grégoire, Thierry Hance, Hans Van Dyck

BIOL2290 Plant physiological biochemistry[15h+15h] (2.5 credits) (in French) Stanley Lutts

Special Programme for the candidates in Medical Sciences

Human Biology

The students will follow the normal programme but will be dispensed from taking the following courses which will be replaced by a volume of credits equivalent to the options :

<u>MED1300</u>	Basic pathology and introduction to medical semeiology[30h] (3 credits)2q (in French)	Pierre Courtoy
<u>FARM2290</u>	A préciser (in French)	
<u>FARM2272</u>	Toxicology[30h] (3 credits)1q (in French)	Pedro Buc Calderon
<u>BRTE2201</u>	Human and animal toxicology[22.5h] (2 credits)1q (in French)	Alfred Bernard
<u>PHAR1230</u>	Pharmacologie générale[30h] (3 credits)2q (in French)	Jean-Marie Maloteaux

Evaluation

The courses are the object of a written or oral exam, or the presentation of a personal project, depending on the case. The periods of apprenticeship and the project will be subject to a report of which the evaluation will count in the final exam mark. The end of course thesis will be presented and defended before a jury and count for half of the average of the marks in the deliberation.

Positioning of the degree within the University cursus

The university graduates in Biology may complete their studies with a higher study diploma in Sciences (DEA). They are also entitled access to the PhD in Sciences, as well as to other complementary studies (Administration and Management, Environment Studies,...).