

**BIOL2M1**

2013 - 2014

Master [60] in Biology

**At Louvain-la-Neuve - 60 credits - 1 year - Day schedule - In french**Dissertation/Graduation Project : **YES** - Internship : **NO**Activities in English: **NO** - Activities in other languages : **NO**Activities on other sites : **NO**Main study domain : **Sciences**Organized by: **Faculté des sciences (SC)**Programme code: **biol2m1** - European Qualifications Framework (EQF): 7**Table of contents**

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## BIOL2M1 - Introduction

## BIOL2M1 - Admission

***For the specific conditions of this program : refer to the French version***

*General and specific admission requirements for this program must be satisfied at the time of enrolling at the university..*

## BIOL2M1 - Information

### Learning outcomes

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The Master in Biology (60 credits) is designed to train "generalist" biologists who can grasp the scientific foundations of how living organisms work. The knowledge they will acquire involves two different levels in the complexity of living organisms which also relate to two option courses: first, biochemistry, molecular and cellular biology, then biology of organisms and ecology. The programme is mostly made up of activities borrowed from the first year of the Master (120 credits) of the same name.

### Teaching method

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The teaching strategy takes its inspiration from the idea of "taking responsibility for one's own learning". In the core subjects, students have a choice between a series of activities in human sciences and may choose 11 credits freely from the **Biochemistry and Molecular and Cell Biology** programme or from that of Biology of Organisms and Ecology. In each option course there are 10 credits (**Biochemistry and Molecular and Cell Biology**) or 14 credits (Biology of Organisms and Ecology) to focus training on a total of eight different areas of biology. Learning is for the most part centred on individual work (e.g. reading, consultation of databases and bibliographic references, field and laboratory work).

### Evaluation

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Students will mainly be assessed on the basis of individual work (e.g. reading, consultation of databases and bibliographic references, writing monographs and reports, presentation of seminars, dissertation and field work). As far as possible, there will be continuous assessment, including regular 'open book examinations'. Certain activities will not be given a precise mark but will be officially certified.

### Possible trainings at the end of the programme

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Holders of the Master in Biology with an option course in biochemistry, molecular and cellular biology may go on to the degree of Master in Biochemistry, Molecular and Cellular Biology (120 credits) subject to a further year of training and a more advanced dissertation.

Holders of the Master in Biology with an option course in biology of organisms and ecology may go on to the degree of Master in Biology of Organisms and Ecology (120 credits) subject to a further year of training and a more advanced dissertation.

## BIOL2M1 - Contacts

### Curriculum Managment

Entite de la structure BIOL

Acronyme	<b>BIOL</b>
Dénomination	Ecole de biologie
Adresse	Croix du sud, 4-5 bte L7.07.05 1348 Louvain-la-Neuve Tél 010 47 34 89 - Fax 010 47 35 15
Site web	<a href="https://www.uclouvain.be/biol">https://www.uclouvain.be/biol</a>
Secteur	Secteur des sciences et technologies ( <b>SST</b> )
Faculté	Faculté des sciences ( <b>SC</b> )
Commission de programme	Ecole de biologie ( <b>BIOL</b> )

### Jury

Président : **Yves-Jacques Schneider**

Secrétaire : **Henri Batoko**

### Usefull Contacts

Secrétaire de l'Ecole de biologie : **Isabelle Magnoli**

## BIOL2M1 - Detailed programme

### Programme structure

The programme comprises core subjects of 30 and an option course of 30 credits.

Students must choose one of the following focuses : research, professional (biotechnology) or teaching.

The option courses available are : biochemistry, molecular genetics and microbial cellular physiology, plant molecular genetics and cellular physiology, animal and human molecular genetics and cellular physiology.

#### Core study

> [Core courses](#) [ en-prog-2013-biol2m1-lbiol210t.html ]

#### Options courses

> [Option in Biochemistry, Molecular and Cellular Biology](#) [ en-prog-2013-biol2m1-lbiol210o.html ]

> [Option in biology of organisms and ecology](#) [ en-prog-2013-biol2m1-lbiol211o.html ]

### Programme by subject

#### Core courses [30.0]

○ Mandatory

△ Courses not taught during 2013-2014

⊕ Periodic courses taught during 2013-2014

⊗ Optional

⊖ Periodic courses not taught during 2013-2014

‡ Two years course

Click on the course title to see detailed informations (objectives, methods, evaluation...)

○ LBIOL2990	Mémoire	N.		15 Credits	
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#### ○ *Sciences humaines (2 credits)*

##### ○ Philosophie (2 credits)

2 crédits à choisir parmi

○ LSC2001	<a href="#">Introduction to contemporary philosophy</a>	<a href="#">Nathalie Frogneux</a>	30h	2 Credits	2q △
○ LSC2220	<a href="#">Philosophy of science</a>	<a href="#">Alexandre Guay</a>	30h	2 Credits	2q
○ LFILO2003E	<a href="#">Ethics in the Sciences and technics (sem)</a>	N.		2 Credits	

#### ○ *Activités au choix (13 credits)*

11 crédits à choisir dans les programmes des masters 120 en biochimie, biologie moléculaire et cellulaire (BBMC) ou en biologie des organismes et écologie (BOE). Des activités de mise à niveau peuvent être choisies pour un maximum de 6 crédits.

⊗ LBBMC2101	<a href="#">Biochimie structurale et fonctionnelle</a>	<a href="#">Pierre Morsomme,</a> <a href="#">Patrice Soumillion</a>	36h+6h	3 Credits	
⊗ LBBMC2102	<a href="#">Biologie moléculaire et cellulaire intégrée</a>	<a href="#">Henri Batoko,</a> <a href="#">Bernard Hallet</a> (compensates Yves-Jacques Schneider), <a href="#">Bernard Hallet,</a> <a href="#">René Rezsohazy</a> (compensates Yves-Jacques Schneider), <a href="#">René Rezsohazy,</a> <a href="#">Yves-Jacques Schneider</a>	30h	3 Credits	

⊗ LBIRC2101A	Analyse biochimique et notions de génie génétique: analyse biochimique	Marc Boutry, François Chaumont, Pierre Morsomme	18.5h+22.5h	3 Credits	1q
⊗ LBRMC2101	Genetic engineering	Marc Boutry	30h+7.5h	3 Credits	1q
⊗ LBRMC2202	Cell culture technology	Marc Boutry (coord.), Pascal Hols, Yves-Jacques Schneider	30h	3 Credits	1q
⊗ LBOE2110	Stages de terrain	Thierry Hance, null SOMEBODY, Hans Van Dyck, Renate Wesselingh (coord.)	20h+80h	6 Credits	1q
⊗ LBOE2111	Evolution	Thierry Hance, Thierry Hance (compensates Caroline Nieberding), Caroline Nieberding, René Rezsóhazy, René Rezsóhazy (compensates Caroline Nieberding), Marie-Claire Van Dyck, Renate Wesselingh, Renate Wesselingh (compensates Caroline Nieberding)	60h	5 Credits	1q
⊗ LBOE2112	Analyse des données biologiques	N.	24h+36h	5 Credits	1q

### ⊗ Activités de mise à niveau

⊗ LBIO1332	Animal embryology	René Rezsóhazy	25h+15h	3 Credits	1q
⊗ LBIO1335	Immunology	Jean-Paul Dehoux	25h+15h	3 Credits	1q
⊗ LBIO1322	Integrated tutorials in biochemistry and molecular genetics	Bernard Hallet, Patrice Soumillion	0h+60h	5 Credits	2q
⊗ LBIO1233	Animal physiology and morphology	Patrick Dumont (coord.), Françoise Gofflot, René Rezsóhazy	30h+30h	10 Credits	2q
⊗ LBIO1342	Plant morphogenesis	François Chaumont	20h+15h	3 Credits	2q
⊗ LBIO1341	Plant physiology	Xavier Draye, Stanley Lutts	45h+15h	5 Credits	2q
⊗ LBIO1336	Animal Biochemistry, physiology and histology	Patrick Dumont, Françoise Gofflot	30h+30h	6 Credits	2q
⊗ LCHM1211	General Chemistry 2	Michel Devillers (coord.), Bernard Tinant	30h+54h	6 Credits	2q
⊗ LCHM1251	Elements of crystallography and molecular spectroscopy	Yaroslav Filinchuk, Sophie Hermans	60h+30h	8 Credits	1+2q
⊗ LCHM1331	Inorganic chemistry I	Sophie Hermans (compensates Michel Devillers)	37.5h+7.5h	4 Credits	1q
⊗ LBIR1317	Chimie organique (3è partie)	Benjamin Elias	30h+15h	3 Credits	1q
⊗ LCHM1321A	Analytical chemistry	N.	30h	3 Credits	1q
⊗ LCHM1361	Introduction to polymer chemistry	Jean-François Gohy	22.5h	2 Credits	2q





## Options [30.0]

L'étudiant choisit une option [30] parmi:

- > [Option in Biochemistry, Molecular and Cellular Biology](#) [en-prog-2013-biol2m1-lbiol210o]
- > [Option in biology of organisms and ecology](#) [en-prog-2013-biol2m1-lbiol211o]

### OPTION IN BIOCHEMISTRY, MOLECULAR AND CELLULAR BIOLOGY [30.0]

● Mandatory

△ Courses not taught during 2013-2014

⊕ Periodic courses taught during 2013-2014

⊗ Optional

⊖ Periodic courses not taught during 2013-2014

‡ Two years course

Click on the course title to see detailed informations (objectives, methods, evaluation...)

#### o Formation commune à l'option en biochimie, biologie moléculaire et cellulaire (13 credits)

##### o au moins 7 crédits à choisir parmi les cours suivants (7 credits)

⊗ LBRTE2201	<a href="#">Human and environmental toxicology</a>	Alfred Bernard, Cathy Debier (coord.)	45h+7.5h	5 Credits	1q
⊗ LBRNA2202	<a href="#">Nano-biotechnologies</a>	Yves Dufrêne	30h	5 Credits	2q
⊗ LBIRA2102	<a href="#">Applied biotechnology</a>	Claude Bragard (coord.), Isabelle Donnay, Xavier Draye	30h+7.5h	4 Credits	1q
⊗ LBRAL2102	<a href="#">Physiological and nutritional biochemistry</a>	Yvan Larondelle (coord.), Yves-Jacques Schneider	52.5h	5 Credits	1q
⊗ LBRAL2103	<a href="#">Food chemistry</a>	Sonia Collin	30h+22.5h	5 Credits	1q
⊗ LFSA2140	<a href="#">Elements of law for industry and research</a>	Fernand De Visscher, Werner Derijcke, Bénédictte Inghels	30h	3 Credits	1q
⊗ LBRTI2203	<a href="#">Communication scientifique dans le domaine des sciences exactes</a>	Pascale Gualtieri (coord.), Joël Saucin	30h	3 Credits	1q
⊗ LSTAT2360	<a href="#">Seminar in data management: basic</a>	Catherine Legrand	7.5h+10h	6 Credits	1q
⊗ LBIRC2101	<a href="#">Biochemical analysis and genetic engineering</a>	Marc Boutry (coord.), François Chaumont, Pierre Morsomme	37.5h+45h	7 Credits	1q
⊗ LBRMC2101	<a href="#">Genetic engineering</a>	Marc Boutry	30h+7.5h	3 Credits	1q
⊗ LBRMC2202	<a href="#">Cell culture technology</a>	Marc Boutry (coord.), Pascal Hols, Yves-Jacques Schneider	30h	3 Credits	1q
⊗ LBBMC2101	<a href="#">Biochimie structurale et fonctionnelle</a>	Pierre Morsomme, Patrice Soumillion	36h+6h	3 Credits	
⊗ LBRMC2201	<a href="#">Bioinformatics : DNA and protein sequences</a>	Philippe Baret, Michel Ghislain (coord.)	30h+15h	4 Credits	1q
⊗ LBBMC2102	<a href="#">Biologie moléculaire et cellulaire intégrée</a>	Henri Batoko, Bernard Hallet (compensates Yves- Jacques Schneider), Bernard Hallet, René Rezsóhazy (compensates Yves- Jacques Schneider), René Rezsóhazy, Yves-Jacques Schneider	30h	3 Credits	

**o Activités au choix (10 credits)**

à choisir dans les options du master en biochimie, biologie moléculaire et cellulaire

⊗ LBBMC2104	Biochimie physiologique animale	Cathy Debier, Marc Francaux, Yves-Jacques Schneider (coord.)	36h+18h	5 Credits	2q
⊗ LBBMC2105	Ingénierie des protéines et enzymologie	Pierre Morsomme, Patrice Soumillion	36h+18h	5 Credits	
⊗ LBBMC2106	Génétique moléculaire et génomique microbiennes	Bernard Hallet, Pascal Hols	36h+18h	5 Credits	
⊗ LBBMC2107	Physiologie cellulaire microbienne	Stephan Declerck, Michel Ghislain, Bernard Hallet, Pascal Hols, Pierre Morsomme	36h+18h	5 Credits	
⊗ LBBMC2108	Génétique moléculaire et génomique végétale	Henri Batoko, François Chaumont (coord.), Xavier Draye	36h+18h	5 Credits	
⊗ LBBMC2109	Physiologie cellulaire végétale	Henri Batoko, Marc Boutry, François Chaumont, Pierre Morsomme	36h+18h	5 Credits	2q
⊗ LBBMC2110	Génétique moléculaire et génomique animales et humaines	Françoise Gofflot, Bernard Knoops, René Rezsöházy	36h+18h	5 Credits	
⊗ LBBMC2111	Physiologie cellulaire animale et humaine	Patrick Dumont, Bernard Knoops	36h+18h	5 Credits	

**o 7 crédits à choisir dans la liste de cours ci-dessous (7 credits)**

**OPTION IN BIOLOGY OF ORGANISMS AND ECOLOGY [30.0]**

● Mandatory

△ Courses not taught during 2013-2014

⊕ Periodic courses taught during 2013-2014

⊗ Optional

⊖ Periodic courses not taught during 2013-2014

‡ Two years course

Click on the course title to see detailed informations (objectives, methods, evaluation...)

● LBOE2110	<a href="#">Stages de terrain</a>	<a href="#">Thierry Hance</a> , <a href="#">null SOMEBODY</a> , <a href="#">Hans Van Dyck</a> , <a href="#">Renate Wesselingh</a> (coord.)	20h+80h	6 Credits	1q
● LBOE2111	<a href="#">Evolution</a>	<a href="#">Thierry Hance</a> , <a href="#">Thierry Hance</a> (compensates Caroline Nieberding), <a href="#">Caroline Nieberding</a> , <a href="#">René Rezsohazy</a> , <a href="#">René Rezsohazy</a> (compensates Caroline Nieberding), <a href="#">Marie-Claire Van Dyck</a> , <a href="#">Renate Wesselingh</a> , <a href="#">Renate Wesselingh</a> (compensates Caroline Nieberding)	60h	5 Credits	1q
● LBOE2112	<a href="#">Analyse des données biologiques</a>	N.	24h+36h	5 Credits	1q

**o Activités au choix (14 credits)**à choisir dans une des options du master en biologie des organismes et écologie (*Biodiversité - Gestion des écosystèmes - Interactions organismes-environnement - Biologie des organismes végétaux*)

⊗ LBOE2120	<a href="#">Conservation de la biodiversité</a>	<a href="#">Nicolas Schtickzelle</a> , <a href="#">Hans Van Dyck</a>	36h+12h	4 Credits	1q
⊗ LBOE2121	<a href="#">Biodiversité des biomes terrestres</a>	<a href="#">Caroline Nieberding</a>	24h	3 Credits	2q
⊗ LBOE2122	<a href="#">Biodiversité du milieu marin</a>	<a href="#">Jérôme Mallefet</a>	24h	3 Credits	2q
⊗ LBOE2123	<a href="#">Biodiversité des eaux douces (FUNDP)</a>	N.		3 Credits	
⊗ LBOE2124	<a href="#">Ecologie moléculaire</a>	<a href="#">Caroline Nieberding</a>	36h+48h	5 Credits	1q
⊗ LBOE2140	<a href="#">Ecologie du paysage</a>	<a href="#">Hans Van Dyck</a>	24h+24h	4 Credits	1q
⊗ LBOE2141	<a href="#">Ecologie de la restauration</a>	<a href="#">Hans Van Dyck</a>	12h+12h	2 Credits	1q
● LBOE2142	<a href="#">Ecologie aquatique continentale (FUNDP)</a>	N.		2 Credits	
⊗ LBOE2143	<a href="#">Questions d'actualité en biologie marine</a>	<a href="#">Cathy Debier</a> , <a href="#">Jérôme Mallefet</a> , <a href="#">Jean-François Rees</a>	24h	2 Credits	2q
⊗ LBOE2144	<a href="#">Ichtyologie, pêche et aquaculture (FUNDP)</a>	N.		2 Credits	
⊗ LBOE2145	<a href="#">Pédologie - V. HALLET (FUNDP)</a>	N.		2 Credits	
⊗ LBOE2146	<a href="#">Hydrogéologie- V. HALLET (FUNDP)</a>	N.		2 Credits	
⊗ LBOE2147	<a href="#">Pollution des eaux - J.-P. DESCY (FUNDP)</a>	N.		2 Credits	
⊗ LBOE2148	<a href="#">Ecologie microbienne</a>	<a href="#">Stephan Declerck</a>	24h	2 Credits	
⊗ LBOE2160	<a href="#">Ecologie des interactions</a>	<a href="#">Thierry Hance</a> , <a href="#">Anne-Laure Jacquemart</a>	24h	2 Credits	1q
⊗ LBOE2161	<a href="#">Ecologie comportementale</a>	<a href="#">Hans Van Dyck</a>	24h	2 Credits	1q
⊗ LBOE2162	<a href="#">Ecophysiologie des végétaux aquatiques (FUNDP)</a>	N.		2 Credits	
⊗ LBOE2163	<a href="#">Éléments d'écotoxicologie (FUNDP)</a>	N.		4 Credits	
⊗ LBOE2164	<a href="#">Relations animaux-environnement (FUNDP)</a>	N.		3 Credits	
⊗ LBOE2165	<a href="#">Génomique, protéomique</a>	<a href="#">Pierre Morsomme</a> , <a href="#">null SOMEBODY</a>	24h+12h	3 Credits	1q
⊗ LBOE2166	<a href="#">Lutte biologique</a>	<a href="#">Claude Bragard</a> , <a href="#">Thierry Hance</a>	12h+24h	3 Credits	2q
⊗ LBOE2168	<a href="#">Interactions plantes-environnement</a>	<a href="#">Stanley Lutts</a>	24h+12h	3 Credits	1q
⊗ LBOE2181	<a href="#">Biotechnologie des plantes</a>	<a href="#">Stanley Lutts</a>	24h+12h	3 Credits	

⊗ LBBMC2108A	Génétique moléculaire et génomique végétale	Henri Batoko, François Chaumont, Xavier Draye		3 Credits	
⊗ LBIRA2106	Principles of phytiatry	Claude Bragard (coord.), Anne Legrève	30h	3 Credits	1q
⊗ LBRES2106C	Gestion intégrée du système sol-plante : Fertilisation	N.	15h	2 Credits	2q
⊗ LBRAI2203	Genetic diversity and plant amelioration	Pierre Bertin	30h+7.5h	3 Credits	1q
○ LBIRF2104B	Diagnostic stationnel et cycles biogéochimiques	N.		2 Credits	
⊗ LBIRA2108A	Crop productions : principes	N.		4 Credits	

