

**Block view of the study programme**

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**Block 1**

**Compulsory courses**

BIOC0709-4	<i>Bioenergetics</i> - Pierre CARDOL	Q1	20	-	-	<b>3</b>
BIOC0210-5	<i>Enzymology</i> - André MATAGNE - [10h Mon. WS]	Q1	20	-	[+]	<b>3</b>
BIOC0720-1	<i>Structural biology</i> - Christian DAMBLON, Frédéric KERFF - [15h Mon. WS]	Q1	25	-	[+]	<b>4</b>
BIOC0721-1	<i>Optical spectroscopy for biochemistry</i> - Christian DAMBLON, André MATAGNE	Q1	15	-	-	<b>2</b>
GENE0001-4	<i>Genetic engineering</i> - Frédéric BOUCHÉ, Alain BRANS, Franck DEQUIEDT, Mireille DUMOULIN, Yvette HABRAKEN, Sylvie LEGRAND, Isabelle MANFROID, H. PENDEVILLESAMAIN, Mohammed TERRAK, Marianne VOZ	Q1	20	-	-	<b>3</b>
GENE0432-4	<i>Genetic and biochemical evolution</i> - Moreno GALLEN, Claire REMACLE	Q1	30	-	-	<b>3</b>
GENE0003-1	<i>Genomics</i> - Marc HANIKENNE	Q2	20	-	-	<b>3</b>
BIOL0008-1	<i>Bioinformatics</i> - Denis BAURAIN - [5h Mon. WS]	Q1	20	-	[+]	<b>3</b>
BIOL0021-1	<i>Biology of the systems</i> - Patrick MEYER - [10h Mon. WS]	Q1	10	-	[+]	<b>2</b>
SSTG0009-1	<i>Placement or practical integrated work (including seminars)</i> - Denis BAURAIN, Franck DEQUIEDT, Moreno GALLEN, Marc HANIKENNE, André MATAGNE, Patrick MEYER, Johan MICHAUX, Patrick MOTTE, Claire PÉRILLEUX, Claire REMACLE, Catherine SADZOT, Marc THIRY - [8w Internship]	TA	-	-	[+]	<b>12</b>

**Optional courses**

**Choose, in accordance with the Jury, 1 option among :**

**Biochemistry**

*Notice* : Only accessible to students who have chosen this subject before the academic year 2019-2020.

**Genetics**

*Notice* : Only accessible to students who have chosen this subject before the academic year 2019-2020.

**Physiology and developmental biology**

*Notice* : Only accessible to students who have chosen this subject before the academic year 2019-2020.

**Microbiology and Immunology**

*Notice* : Only accessible to students who have chosen this subject before the academic year 2019-2020.

**Biochemistry and microbiology**

*Notice* : Only accessible to students who have chosen this subject before the academic year 2021-2022.

BIOC0723-1	<i>Applied bioenergetics</i> - Pierre CARDOL	Q2	15	-	-	<b>2</b>
BIOC0722-1	<i>Application of spectroscopic techniques to the study of folding and stability of proteins</i> - André MATAGNE - [10h Mon. WS]	Q2	20	-	[+]	<b>3</b>
CHIM0688-1	<i>Biological mass spectrometry</i> - Loïc QUINTON - [5h Mon. WS]	Q2	15	-	[+]	<b>2</b>
BIOC0003-2	<i>Biochemistry and physiology of the micro-organisms</i>	Q2	15	-	-	<b>2</b>
BIOL0013-1	<i>Development of microorganisms</i> - Sébastien RIGALI - [5h Mon. WS]	Q2	15	-	[+]	<b>2</b>
MICR1713-1	<i>Extremophile microorganisms</i> - Georges FELLER, Moreno GALLEN, Annick WILMOTTE - [5h Mon. WS]	Q2	10	-	[+]	<b>2</b>
MICR0004-1	<i>Bacterial pathogenesis</i>	Q2	15	-	-	<b>2</b>

MICR0005-1	<i>Prostistology</i> - Denis BAURAIN	Q2	15	-	-	-	2
MICR0006-1	<i>Virology, immunology and vaccinology</i> - Catherine SADZOT	Q2	25	-	-	-	3
CHIM0059-6	<i>Industrial Microbiology</i> - Patrick FICKERS	Q2	20	-	-	-	2

#### Genetics, physiology and developmental biology

*Notice* : Only accessible to students who have chosen this subject before the academic year 2021-2022.

GENE0445-1	<i>Quantitative genetics</i> - Franck DEQUIEDT - [15h Mon. WS]	Q2	15	-	-	[+]	3
GENE0441-2	<i>Organelle genetics, Part A</i> - Claire REMACLE	Q2	15	-	-	-	2
BIOL0009-1	<i>Molecular and cellular physiology and animal signaling pathways</i> - Marc MULLER, Ingrid STRUMAN, Marc THIRY	Q2	25	-	-	-	3
BIOL0010-1	<i>Molecular and cellular physiology and plant signaling pathways</i> - Patrick MOTTE	Q2	20	-	-	-	3
BIOL0011-1	<i>Biology of animal development</i> - Bernard PEERS	Q2	25	-	-	-	3
BIOL0012-1	<i>Biology of plant development</i> - Claire PÉRILLEUX	Q2	25	-	-	-	3
BIOL0032-1	<i>Evolutionary developmental biology</i> - Bernard PEERS, Claire PÉRILLEUX	Q2	15	-	-	-	2
BIOL0014-1	<i>Dynamic molecular imaging</i> - Patrick MOTTE	Q2	20	-	-	-	3

#### BIM - specific option

INFO0956-1	<i>Introduction to biological data analysis (english language)</i> - Marilaure GRÉGOIRE, Patrick MEYER - [20h Mon. WS]	Q1	5	-	-	[+]	3
INFO0009-2	<i>Database (general organisation)</i> - Christophe DEBRUYNE - [25h Proj.]	Q2	26	26	-	[+]	5
INFO0960-1	<i>Command-line interfaces and tools for biologists (english language)</i> - Pierre TOCQUIN	Q1	10	10	-	-	2
BIOL0022-2	<i>Introduction to intellectual property</i> - Jérémie FAYS, Fabienne PIRON - [10h Mon. WS]	Q2	10	-	-	[+]	2
BIOL0014-1	<i>Dynamic molecular imaging</i> - Patrick MOTTE	Q2	20	-	-	-	3
INFO0961-1	<i>Introduction to bioautomatics and image analysis</i> - Patrick MEYER - [12h Proj.]	Q2	12	16	-	[+]	4
INFO0959-1	<i>Bioinformatics applications: Technological survey (english language)</i> - Denis BAURAIN, Marc HANIKENNE, Patrick MEYER, Pierre TOCQUIN - [40h Proj.]	Q2	-	-	-	[+]	3

#### Optional free course

AESS0320-1	<i>Initiation to biology didactics</i> - MarieNoëlle HINDRYCKX	TA	20	20	-	-	2
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#### Block 2

##### Compulsory courses

BIOL0030-1	<i>Modeling dynamical biological systems (english language)</i> - Marilaure GRÉGOIRE, Patrick MEYER - [15h Mon. WS]	Q2	15	-	-	[+]	3
BIOC9239-1	<i>Structural bioinformatics (english language)</i> - Frédéric KERFF	Q2	25	25	-	-	3
SMEM0023-1	<i>Final thesis</i> - COLLÉGIALITÉ	TA	-	-	-	-	24

##### Optional courses

###### Single focus

###### Research Focus

BIOL0029-1	<i>Practical genomics (english language)</i> - Denis BAURAIN, Marc HANIKENNE - [30h Mon. WS]	Q1	10	-	-	[+]	4
INFO0953-1	<i>Scripting interfaces for biological software and databases (english)</i>	Q1	20	-	-	[+]	8

	language) - Denis BAURAIN, Pierre TOCQUIN - [50h Mon. WS]							
INFO0954-1	<i>Advanced biological data analysis</i> (english language) - Patrick MEYER - [30h Mon. WS]	Q1	10	-	[+]	5		
INFO0902-1	<i>Data structures and algorithms</i> - Pierre GEURTS - [40h Proj.]	Q2	26	20	[+]	5		
INFO0955-1	<i>Bioinformatics applications: Case studies in veterinary sciences, agronomical sciences and systems medicine</i> (english language) - Tom DRUET, Frédéric FARNIR, Sébastien MASSART, Kristel VAN STEEN - [50h Mon. WS]	Q2	20	-	[+]	8		

#### Bloc d'aménagement du programme de l'année

### Additional ECTS (0-60 max) Master in bio-informatics and modelling (120 ECTS)

With the agreement of the jury and depending on their previous studies, students will follow:

- Either the Bloc 0 programme in the Masters in Biochemistry and Molecular and Cell Biology
- Or a programme worth a maximum of 60 credits, with classes chosen from the Bachelors in Biological Sciences.

#### Optional courses

Choose courses totalling 60 ECTS amongst :

STAT0750-1	<i>Multivariate statistical analysis (software R)</i> - Arnout VAN MESSEM	Q2	10	10	-	3		
STAT0077-1	<i>Computing analysis and processing of biological data</i> - Patrick MEYER	Q1	25	-	-	2		
MICR0720-1	<i>Phycology and mycology</i> - Denis BAURAIN	Q1	20	10	-	3		
MICR0721-1	<i>Bacteriology</i>	Q1	20	10	-	3		
MICR1716-1	<i>Virology</i> - Catherine SADZOT	Q2	20	10	-	2		
BIOL0216-1	<i>Animal physiology</i> - JeanChristophe PLUMIER, Marc THIRY	Q1	60	30	-	7		
BIOL0217-1	<i>Vegetal physiology</i>	Q2				5		
	- <i>Theory</i> - Claire PÉRILLEUX		35	-	-			
	- <i>Practice</i> - Claire PÉRILLEUX		-	20	-			
IMMU0521-1	<i>Immunology</i> - Catherine SADZOT	Q2	25	10	-	3		
BIOL0003-1	<i>Biology of pluricellular organisms</i>	Q1				5		
	- <i>Animal</i> - Loïc MICHEL		15	15	-			
	- <i>Plant Biology</i> - Claire PÉRILLEUX		15	15	-			
GENE9002-1	<i>Molecular biology of gene I</i> - Franck DEQUIEDT	Q1	30	-	-	3		
GENE9003-1	<i>Molecular biology of gene II</i> - Franck DEQUIEDT	Q2	30	30	-	4		
BIOC9242-2	<i>Biological macromolecules chemistry</i>	Q1				4		
	- <i>Part A</i> - Moreno GALLEN, Loïc QUINTON		40	-	-			
	- <i>Part B - Thermodynamics of biological systems</i> - Moreno GALLEN		10	-	-			
BIOC9243-1	<i>Equilibria in biochemistry and enzyme kinetics</i> - Moreno GALLEN, André MATAGNE	Q2	20	40	-	5		
BIOL0024-1	<i>Molecular physiology of the cell</i> - Patrick MOTTE	Q2	15	15	-	2		
STRA0044-1	<i>Training in scientific communication</i> - Moreno GALLEN, Patrick MOTTE, Marianne VOZ - [40h Internship]	Q2	-	-	[+]	3		
PHIL1227-1	<i>Philosophy and bioethics</i>	Q2				2		
	- <i>Éléments de philosophie des sciences</i> - Julien PIERON		15	-	-			
	- <i>Bioéthique</i> - Florence CAEYMAEX, Patrick DU JARDIN		15	-	-			
LANG0077-8	<i>English 2</i> (english language) - Clara BRERETON, Véronique DOPPAGNE, Ellen HARRY	TA	45	-	-	4		

[...] Courses from the Bachelor in Biology.

**Refresher course within the framework of the adjusted programme for students benefiting from direct access in Block 2**

With the jury's agreement, the student may follow, if necessary, revision courses for a maximum of 13 credits selected from the courses below, depending on their prior education.

BIOL0008-1	<i>Bioinformatics</i> - Denis BAURAIN - [5h Mon. WS]	Q1	20	-	[+]	3
GENE0003-1	<i>Genomics</i> - Marc HANIKENNE	Q2	20	-	-	3
BIOL0021-1	<i>Biology of the systems</i> - Patrick MEYER - [10h Mon. WS]	Q1	10	-	[+]	2
INFO0956-1	<i>Introduction to biological data analysis</i> (english language) - Marilaure GRÉGOIRE, Patrick MEYER - [20h Mon. WS]	Q1	5	-	[+]	3
INFO0960-1	<i>Command-line interfaces and tools for biologists</i> (english language) - Pierre TOCQUIN	Q1	10	10	-	2