

#### Block view of the study programme

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#### Block 1

#### Programme selection

In agreement with the Jury, choose one of the two programmes according to the student's background:

##### Reformed programme

Only accessible to students starting their Masters programme in 2023;2024 or who have just gained the credits from Block 0.

BIOC0726-1	<i>Toolbox: nucleic acid analysis techniques</i> - Denis BAURAIN, Franck DEQUIEDT, Marc HANIKENNE, Patrick MEYER - [4h AUTR]	Q1	20	16	[+]	3
BIOC0727-1	<i>Toolbox: imaging and experimental models</i> - Frédéric BOUCHÉ, Grégory FETTWEIS, Patrick MOTTE, N..., Sandra ORMENESE, Loïc QUINTON, Damien SLUYSMANS, Nicolas THELEN, Marc THIRY, Pierre TOCQUIN, Marianne VOZ - [16h AUTR]	Q1	20	4	[+]	3
BIOC0728-1	<i>Toolbox: protein analysis techniques</i> - Christian DAMBLON, Franck DEQUIEDT, Mireille DUMOULIN, André MATAGNE, N..., Damien SLUYSMANS, Marylène VANDEVENNE - [20h AUTR]	Q1	20	-	[+]	3
BIOC0729-1	<i>Adaptation, evolution and diversity</i> - Denis BAURAIN, Franck DEQUIEDT, Tom DRUET, Moreno GALLEN, Marc HANIKENNE, Alice MOUTON, N..., Claire REMACLE, Catherine SADZOT, Annick WILMOTTE - [30h AUTR]	Q1	40	10	[+]	5
BIOC0730-1	<i>Development, from the cell to the organism</i> - Patrick MOTTE, Bernard PEERS, Claire PÉRILLEUX, Sébastien RIGALI, Ingrid STRUMAN, Mohammed TERRAK, Marc THIRY, Pierre TOCQUIN - [45h AUTR]	Q1	60	15	[+]	7
BIOC0731-1	<i>Responses to the environment</i> - Frédéric BOUCHÉ, Franck DEQUIEDT, Marc HANIKENNE, N..., Claire PÉRILLEUX, Sébastien RIGALI - [20h AUTR]	Q1	40	20	[+]	5
BIOC0732-1	<i>Interaction between organisms</i> - Denis BAURAIN, François BEAUFAY, Pierre CARDOL, Marielle LEBRUN, Nicolas MAGAIN, Sébastien MASSART, Sébastien RIGALI, Catherine SADZOT - [25h AUTR]	Q1	40	15	[+]	5
BIOC0733-1	<i>Toolbox: structural biology</i> - Christian DAMBLON, Frédéric KERFF, N..., Loïc QUINTON - [5h AUTR]	Q2	20	15	[+]	3
BIOC0734-1	<i>Metabolism</i> - Pierre CARDOL, Christian DAMBLON, Stéphanie HERKENNE, Frédéric KERFF, Sylvie LEGRAND, Patrick MEYER, N..., Loïc QUINTON, Claire REMACLE - [30h AUTR]	Q2	40	10	[+]	5
BIOC0735-1	<i>Biotechnologies</i> - Alain BRANS, Patrick FICKERS, Moreno GALLEN, Sylvie LEGRAND, André MATAGNE, N..., Claire REMACLE, Mohammed TERRAK, Pierre TOCQUIN, Marylène VANDEVENNE - [15h AUTR]	Q2	60	45	[+]	7
BIOC0736-1	<i>Biomedical strategies</i> - François BEAUFAY, Franck DEQUIEDT, Emmanuel DI VALENTIN, Mireille DUMOULIN, Moreno GALLEN, Frédéric KERFF, André MATAGNE, Sébastien RIGALI, Ingrid STRUMAN, Mohammed TERRAK, Marylène VANDEVENNE - [35h AUTR]	Q2	40	5	[+]	5
INFO0960-1	<i>Command-line interfaces and tools for biologists</i> (english language) - Pierre TOCQUIN	Q2	10	10	-	2
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</i> (english language) - Denis BAURAIN, Marc HANIKENNE, Patrick MEYER, Pierre TOCQUIN - [40h Proj.]	Q2	-	-	[+]	3

##### Old programme

Only open to students enrolled for the master's programme before the 2023-2024 academic year.

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

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

MICR0004-1	<i>Bacterial pathogenesis</i> - N...	Q2	15	-	-	2
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> - N..., 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	Q2	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	-	3
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#### Block 2

#### Poursuite du choix du programme

En accord avec le Jury, poursuivre le programme choisi en fonction du parcours de l'étudiant :

##### Reformed programme

BIOL0030-1	<i>Modeling dynamical biological systems (english language)</i> - Marilaure GRÉGOIRE, Patrick MEYER - [15h Mon. WS]	Q1	15	-	[+]	3
BIOC9239-1	<i>Structural bioinformatics (english language)</i> - Frédéric KERFF	Q1	25	25	-	3
SMEM0023-1	<i>Final thesis</i> - COLLÉGIALITÉ	TA	-	-	-	24

##### Single focus

#### Research Focus

BIOL0029-1	<i>Practical genomics</i> (english language) - Denis BAURAIN, Marc HANIKENNE - [30h Mon. WS]	Q1	10	-	[+]	4
INFO0953-1	<i>Scripting interfaces for biological software and databases</i> (english language) - Denis BAURAIN, Pierre TOCQUIN - [50h Mon. WS]	Q1	20	-	[+]	8
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

#### Old programme

BIOL0030-1	<i>Modeling dynamical biological systems</i> (english language) - Marilaure GRÉGOIRE, Patrick MEYER - [15h Mon. WS]	Q1	15	-	[+]	3
BIOC9239-1	<i>Structural bioinformatics</i> (english language) - Frédéric KERFF	Q1	25	25	-	3
SMEM0023-1	<i>Final thesis</i> - COLLÉGIALITÉ	TA	-	-	-	24

#### Single focus

##### Research Focus

BIOL0029-1	<i>Practical genomics</i> (english language) - Denis BAURAIN, Marc HANIKENNE - [30h Mon. WS]	Q1	10	-	[+]	4
INFO0953-1	<i>Scripting interfaces for biological software and databases</i> (english language) - Denis BAURAIN, Pierre TOCQUIN - [50h Mon. WS]	Q1	20	-	[+]	8
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> - François BEAUFAY	Q1	20	10	-	3
MICR1716-1	<i>Virology</i> - Catherine SADZOT	Q2	20	-	-	2

BIOL0216-1	<i>Animal physiology</i> - JeanChristophe PLUMIER, Marc THIRY	Q1	60	30	-	7
BIOL0217-1	<i>Vegetal physiology</i> - <i>Theory</i> - Claire PÉRILLEUX - <i>Practice</i> - Claire PÉRILLEUX	Q2	35	-	-	5
IMMU0521-1	<i>Immunology</i> - Catherine SADZOT	Q2	25	20	-	3
BIOL0003-1	<i>Biology of pluricellular organisms</i> - <i>Animal</i> - Loïc MICHEL - <i>Plant Biology</i> - Claire PÉRILLEUX	Q1	15	15	-	5
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> - <i>Part A</i> - Moreno GALLEN, Loïc QUINTON - <i>Part B - Thermodynamics of biological systems</i> - Moreno GALLEN	Q1	40	-	-	4
BIOC9243-1	<i>Equilibria in biochemistry and enzyme kinetics</i> - 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> - François BEAUFAY, Moreno GALLEN, Patrick MOTTE, Marianne VOZ - [40h Internship]	Q2	-	-	[+]	3
PHIL1227-1	<i>Philosophy and bioethics</i> - <i>Eléments de philosophie des sciences</i> - Julien PIERON - <i>Bioéthique</i> - Florence CAEYMAEX, Patrick DU JARDIN, N...	Q2	15	-	-	2
LANG0077-8	<i>English 2 (english language)</i> - 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 8 credits selected from the courses below, depending on their prior education.

BIOC0726-1	<i>Toolbox: nucleic acid analysis techniques</i> - Denis BAURAIN, Franck DEQUIEDT, Marc HANIKENNE, Patrick MEYER - [4h AUTR]	Q1	20	16	[+]	3
OCEA0224-1	<i>Statistical analysis of oceanographic data</i> - Arthur CAPET, Marilaure GRÉGOIRE, Patrick MEYER	Q1	15	15	-	3
INFO0960-1	<i>Command-line interfaces and tools for biologists (english language)</i> - Pierre TOCQUIN	Q2	10	10	-	2