

Cycle view of the study programme

B1 Or Th Pr Au Cr

Programme selection (B1 : 60Cr, B2 : 60Cr)

In agreement with the Jury, choose one of the two programmes according to the student's background: (B1 : 60Cr, B2 : 60Cr)

Reformed programme (B1 : 60Cr, B2 : 60Cr)

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

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|------------|--|----|----|----|----|-----|---|
| BIOC0726-1 | <i>Toolbox: nucleic acid analysis techniques</i> - Denis BAURAIN, Franck DEQUIEDT, Marc HANIKENNE, Patrick MEYER - [4h AUTR] | B1 | Q1 | 20 | 16 | [+] | 3 |
| BIOC0727-1 | <i>Toolbox: imaging and experimental models</i> - Frédéric BOUCHÉ, Grégory FETTWEIS, Patrick MOTTE, N..., Sandra ORMESENE, Loïc QUINTON, Damien SLUYSMANS, Nicolas THELEN, Marc THIRY, Pierre TOCQUIN, Marianne VOZ - [16h AUTR] | B1 | 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] | B1 | 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] | B1 | 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] | B1 | 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] | B1 | 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] | B1 | Q1 | 40 | 15 | [+] | 5 |
| BIOC0733-1 | <i>Toolbox: structural biology</i> - Christian DAMBLON, Frédéric KERFF, N..., Loïc QUINTON - [5h AUTR] | B1 | 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] | B1 | 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] | B1 | 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] | B1 | Q2 | 40 | 5 | [+] | 5 |
| INFO0960-1 | <i>Command-line interfaces and tools for biologists</i> (english language) - Pierre TOCQUIN | B1 | Q2 | 10 | 10 | - | 2 |
| INFO0961-1 | <i>Introduction to bioautomatics and image analysis</i> - Patrick MEYER - [12h Proj.] | B1 | Q2 | 12 | 16 | [+] | 4 |
| INFO0959-1 | <i>Bioinformatics applications: Technological survey</i> (english language) - Denis BAURAIN, Marc HANIKENNE, Patrick MEYER, | B1 | Q2 | - | - | [+] | 3 |

Pierre TOCQUIN - [40h Proj.]

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|------------|---|----|----|----|----|-----|----|
| BIOL0030-1 | <i>Modeling dynamical biological systems</i> (english language) - Marilaure GRÉGOIRE, Patrick MEYER - [15h Mon. WS] | B2 | Q1 | 15 | - | [+] | 3 |
| BIOC9239-1 | <i>Structural bioinformatics</i> (english language) - Frédéric KERFF | B2 | Q1 | 25 | 25 | - | 3 |
| SMEM0023-1 | <i>Final thesis</i> - COLLÉGIALITÉ | B2 | TA | - | - | - | 24 |

Single focus (B2 : 30Cr)

Research Focus (B2 : 30Cr)

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|------------|--|----|----|----|----|-----|---|
| BIOL0029-1 | <i>Practical genomics</i> (english language) - Denis BAURAIN, Marc HANIKENNE - [30h Mon. WS] | B2 | Q1 | 10 | - | [+] | 4 |
| INFO0953-1 | <i>Scripting interfaces for biological software and databases</i> (english language) - Denis BAURAIN, Pierre TOCQUIN - [50h Mon. WS] | B2 | Q1 | 20 | - | [+] | 8 |
| INFO0954-1 | <i>Advanced biological data analysis</i> (english language) - Patrick MEYER - [30h Mon. WS] | B2 | Q1 | 10 | - | [+] | 5 |
| INFO0902-1 | <i>Data structures and algorithms</i> - Pierre GEURTS - [40h Proj.] | B2 | 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] | B2 | Q2 | 20 | - | [+] | 8 |

Old programme (B1 : 60Cr, B2 : 60Cr)

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

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|------------|--|----|----|----|----|-----|----|
| BIOC0709-4 | <i>Bioenergetics</i> - Pierre CARDOL | B1 | Q1 | 20 | - | - | 3 |
| BIOC0210-5 | <i>Enzymology</i> - André MATAGNE - [10h Mon. WS] | B1 | Q1 | 20 | - | [+] | 3 |
| BIOC0720-1 | <i>Structural biology</i> - Christian DAMBLON, Frédéric KERFF - [15h Mon. WS] | B1 | Q1 | 25 | - | [+] | 4 |
| BIOC0721-1 | <i>Optical spectroscopy for biochemistry</i> - Christian DAMBLON, André MATAGNE | B1 | 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. PENDEVILLE SAMAIN, Mohammed TERRAK, Marianne VOZ | B1 | Q1 | 20 | - | - | 3 |
| GENE0432-4 | <i>Genetic and biochemical evolution</i> - Moreno GALLEN, Claire REMACLE | B1 | Q1 | 30 | - | - | 3 |
| GENE0003-1 | <i>Genomics</i> - Marc HANIKENNE | B1 | Q2 | 20 | - | - | 3 |
| BIOL0008-1 | <i>Bioinformatics</i> - Denis BAURAIN - [5h Mon. WS] | B1 | Q1 | 20 | - | [+] | 3 |
| BIOL0021-1 | <i>Biology of the systems</i> - Patrick MEYER - [10h Mon. WS] | B1 | 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] | B1 | TA | - | - | [+] | 12 |
| BIOL0030-1 | <i>Modeling dynamical biological systems</i> (english language) - Marilaure GRÉGOIRE, Patrick MEYER - [15h Mon. WS] | B2 | Q1 | 15 | - | [+] | 3 |
| BIOC9239-1 | <i>Structural bioinformatics</i> (english language) - Frédéric KERFF | B2 | Q1 | 25 | 25 | - | 3 |
| SMEM0023-1 | <i>Final thesis</i> - COLLÉGIALITÉ | B2 | TA | - | - | - | 24 |

Choose, in accordance with the Jury, 1 option among : (B1 : 22Cr)

Biochemistry (B1 : 15Cr)

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

Genetics (B1 : 15Cr)

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

Physiology and developmental biology (B1 : 15Cr)

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

Microbiology and Immunology (B1 : 15Cr)

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

Biochemistry and microbiology (B1 : 22Cr)

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

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|------------|--|----|----|----|---|-----|---|
| BIOC0723-1 | <i>Applied bioenergetics</i> - Pierre CARDOL | B1 | 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] | B1 | Q2 | 20 | - | [+] | 3 |
| CHIM0688-1 | <i>Biological mass spectrometry</i> - Loïc QUINTON - [5h Mon. WS] | B1 | Q2 | 15 | - | [+] | 2 |
| BIOC0003-2 | <i>Biochemistry and physiology of the micro-organisms</i> - JeanDenis DOCQUIER | B1 | Q2 | 15 | - | - | 2 |
| BIOL0013-1 | <i>Development of microorganisms</i> - Sébastien RIGALI - [5h Mon. WS] | B1 | Q2 | 15 | - | [+] | 2 |
| MICR1713-1 | <i>Extremophile microorganisms</i> - Moreno GALLEN, Annick WILMOTTE - [5h Mon. WS] | B1 | Q2 | 10 | - | [+] | 2 |
| MICR0004-1 | <i>Bacterial pathogenesis</i> - N... | B1 | Q2 | 15 | - | - | 2 |
| MICR0005-1 | <i>Prostistology</i> - Denis BAURAIN | B1 | Q2 | 15 | - | - | 2 |
| MICR0006-1 | <i>Virology, immunology and vaccinology</i> - Catherine SADZOT | B1 | Q2 | 25 | - | - | 3 |
| CHIM0059-6 | <i>Industrial Microbiology</i> - Patrick FICKERS | B1 | Q2 | 20 | - | - | 2 |

Genetics, physiology and developmental biology (B1 : 22Cr)

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

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|------------|---|----|----|----|---|-----|---|
| GENE0445-1 | <i>Quantitative genetics</i> - Franck DEQUIEDT - [15h Mon. WS] | B1 | Q2 | 15 | - | [+] | 3 |
| GENE0441-2 | <i>Organelle genetics, Part A</i> - Claire REMACLE | B1 | Q2 | 15 | - | - | 2 |
| BIOL0009-1 | <i>Molecular and cellular physiology and animal signaling pathways</i> - N..., Ingrid STRUMAN, Marc THIRY | B1 | Q2 | 25 | - | - | 3 |
| BIOL0010-1 | <i>Molecular and cellular physiology and plant signaling pathways</i> - Patrick MOTTE | B1 | Q2 | 20 | - | - | 3 |
| BIOL0011-1 | <i>Biology of animal development</i> - Bernard PEERS | B1 | Q2 | 25 | - | - | 3 |
| BIOL0012-1 | <i>Biology of plant development</i> - Claire PÉRILLEUX | B1 | Q2 | 25 | - | - | 3 |
| BIOL0032-1 | <i>Evolutionary developmental biology</i> - Bernard PEERS, Claire PÉRILLEUX | B1 | Q2 | 15 | - | - | 2 |
| BIOL0014-1 | <i>Dynamic molecular imaging</i> - Patrick MOTTE | B1 | Q2 | 20 | - | - | 3 |

BIM - specific option (B1 : 22Cr)

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|------------|--|----|----|----|----|-----|---|
| INFO0956-1 | <i>Introduction to biological data analysis</i> (english language) - Marilaure GRÉGOIRE, Patrick MEYER - [20h Mon. WS] | B1 | Q1 | 5 | - | [+] | 3 |
| INFO0009-2 | <i>Database (general organisation)</i> - Christophe DEBRUYNE - [25h Proj.] | B1 | Q2 | 26 | 26 | [+] | 5 |
| INFO0960-1 | <i>Command-line interfaces and tools for biologists</i> (english language) - Pierre TOCQUIN | B1 | Q2 | 10 | 10 | - | 2 |
| BIOL0022-2 | <i>Introduction to intellectual property</i> - Jérémie FAYS, Fabienne PIRON - [10h Mon. WS] | B1 | Q2 | 10 | - | [+] | 2 |
| BIOL0014-1 | <i>Dynamic molecular imaging</i> - Patrick MOTTE | B1 | Q2 | 20 | - | - | 3 |
| INFO0961-1 | <i>Introduction to bioautomatics and image analysis</i> - Patrick MEYER - [12h Proj.] | B1 | Q2 | 12 | 16 | [+] | 4 |
| INFO0959-1 | <i>Bioinformatics applications: Technological survey</i> (english language) - Denis BAURAIN, Marc HANIKENNE, Patrick MEYER, Pierre TOCQUIN - [40h Proj.] | B1 | Q2 | - | - | [+] | 3 |

Single focus (B2 : 30Cr)

Research Focus (B2 : 30Cr)

| | | | | | | | |
|------------|--|----|----|----|----|-----|---|
| BIOL0029-1 | <i>Practical genomics</i> (english language) - Denis BAURAIN, Marc HANIKENNE - [30h Mon. WS] | B2 | Q1 | 10 | - | [+] | 4 |
| INFO0953-1 | <i>Scripting interfaces for biological software and databases</i> (english language) - Denis BAURAIN, Pierre TOCQUIN - [50h Mon. WS] | B2 | Q1 | 20 | - | [+] | 8 |
| INFO0954-1 | <i>Advanced biological data analysis</i> (english language) - Patrick MEYER - [30h Mon. WS] | B2 | Q1 | 10 | - | [+] | 5 |
| INFO0902-1 | <i>Data structures and algorithms</i> - Pierre GEURTS - [40h Proj.] | B2 | 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] | B2 | Q2 | 20 | - | [+] | 8 |

Optional free course (B1 : 3Cr)

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|------------|--|----|----|----|----|---|---|
| AESS0320-1 | <i>Initiation to biology didactics</i> - MarieNoëlle HINDRYCKX | B1 | TA | 20 | 20 | - | 3 |
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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.

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|------------|--|----|----|----|----|-----|---|
| BIOC0726-1 | <i>Toolbox: nucleic acid analysis techniques</i> - Denis BAURAIN, Franck DEQUIEDT, Marc HANIKENNE, Patrick MEYER - [4h AUTR] | B2 | Q1 | 20 | 16 | [+] | 3 |
| OCEA0224-1 | <i>Statistical analysis of oceanographic data</i> - Arthur CAPET, Marilaure GRÉGOIRE, Patrick MEYER | B2 | Q1 | 15 | 15 | - | 3 |
| INFO0960-1 | <i>Command-line interfaces and tools for biologists</i> (english language) - Pierre TOCQUIN | B2 | Q2 | 10 | 10 | - | 2 |

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 (B0 : 60Cr)

Choose courses totalling 60 ECTS amongst : (B0 : 60Cr)

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|------------|--|----|----|----|----|-----|----------|
| STAT0750-1 | <i>Multivariate statistical analysis (software R)</i> - Arnout VAN MESSEM | B0 | Q2 | 10 | 10 | - | 3 |
| STAT0077-1 | <i>Computing analysis and processing of biological data</i> - Patrick MEYER | B0 | Q1 | 25 | - | - | 2 |
| MICR0720-1 | <i>Phycology and mycology</i> - Denis BAURAIN | B0 | Q1 | 20 | 10 | - | 3 |
| MICR0721-1 | <i>Bacteriology</i> - François BEAUFAY | B0 | Q1 | 20 | 10 | - | 3 |
| MICR1716-1 | <i>Virology</i> - Catherine SADZOT | B0 | Q2 | 20 | - | - | 2 |
| BIOL0216-1 | <i>Animal physiology</i> - JeanChristophe PLUMIER, Marc THIRY | B0 | Q1 | 60 | 30 | - | 7 |
| BIOL0217-1 | <i>Vegetal physiology</i> - <i>Theory</i> - Claire PÉRILLEUX - <i>Practice</i> - Claire PÉRILLEUX | B0 | Q2 | 35 | - | - | 5 |
| IMMU0521-1 | <i>Immunology</i> - Catherine SADZOT | B0 | Q2 | 25 | 20 | - | 3 |
| BIOL0003-1 | <i>Biology of pluricellular organisms</i> - <i>Animal</i> - Loïc MICHEL - <i>Plant Biology</i> - Claire PÉRILLEUX | B0 | Q1 | 15 | 15 | - | 5 |
| GENE9002-1 | <i>Molecular biology of gene I</i> - Franck DEQUIEDT | B0 | Q1 | 30 | - | - | 3 |
| GENE9003-1 | <i>Molecular biology of gene II</i> - Franck DEQUIEDT | B0 | Q2 | 30 | 30 | - | 4 |
| BIOC9242-2 | <i>Biological macromolecules chemistry</i> - <i>Part A</i> - Moreno GALLEN, Loïc QUINTON - <i>Part B</i> - <i>Thermodynamics of biological systems</i> - Moreno GALLEN | B0 | Q1 | 40 | - | - | 4 |
| BIOC9243-1 | <i>Equilibria in biochemistry and enzyme kinetics</i> - André MATAGNE | B0 | Q2 | 20 | 40 | - | 5 |
| BIOL0024-1 | <i>Molecular physiology of the cell</i> - Patrick MOTTE | B0 | Q2 | 15 | 15 | - | 2 |
| STRA0044-1 | <i>Training in scientific communication</i> - François BEAUFAY, Moreno GALLEN, Patrick MOTTE, Marianne VOZ - [40h Internship] | B0 | Q2 | - | - | [+] | 3 |
| PHIL1227-1 | <i>Philosophy and bioethics</i> - <i>Éléments de philosophie des sciences</i> - Julien PIERON - <i>Bioéthique</i> - Florence CAEYMAEX, Patrick DU JARDIN, N... | B0 | Q2 | 15 | - | - | 2 |
| LANG0077-8 | <i>English 2 (english language)</i> - Clara BRERETON, Véronique DOPPAGNE, Ellen HARRY | B0 | TA | 45 | - | - | 4 |

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