

Bachelor in Bioengineering















The teaching covers four areas

- > A general background in sciences: mathematics, chemistry, physics, biology (general, zoology and botany), informatics;
- > Engineering sciences: transport phenomena, applied thermodynamics, electricity and electronics, chemical engineering, modeling;
- > Bioengineering sciences: agronomy, biochemistry and molecular biology, earth and soil science, environmental technologies
- > Humanities, in particular languages and an optional course in epistemology and business economics

The courses are taught ex cathedra and through the implementation of concrete projects. About half of the teaching volume consists of projects, exercises and laboratory work. The other half consists of theoretical teaching. Excursions are organized as well.

Bloc 1 | BA-IRBI

























Cours obligatoires

BING-F1001	Sciences de la terre et du bioingénieur, environnement et société Pierre REGNIER (Coordinator), Charles DE CANNIERE, Jean-Michel DECROLY, Christian HERMANS, Frank PATTYN and Alizée Roobaert 5 credits [lecture: 48h, seminars: 12h]  first term  French
BIOL-F105	Biologie générale Martine VERCAUTEREN (Coordinator), Mélanie BOECKSTAENS, Cyril GUEYDAN, Véronique KRUYSS and Karine VAN DONINCK 10 credits [lecture: 94h, tutorial classes: 6h, practical work: 20h]  first and second terms  French
CHIM-F101	Chimie générale Laurence RONGY (Coordinator), François RENIERS and Thierry VISART DE BOCARME 15 credits [lecture: 84h, tutorial classes: 48h, practical work: 52h, project: 40h]  first and second terms  French
CHIM-F102	Chimie organique 1 Cécile MOUCHERON (Coordinator) 5 credits [lecture: 30h, tutorial classes: 18h]  second term  French
MATH-F112	Mathématiques 1 Dimitri LEEMANS (Coordinator), Michele D'ADDERIO and Bruno PREMOSELLI 10 credits [lecture: 60h, tutorial classes: 60h]  first and second terms  French
MATH-F115	Compléments d'analyse et algèbre linéaire Joel FINE (Coordinator), Michele D'ADDERIO and Laurent LA FUENTE-GRAVY 5 credits [lecture: 30h, tutorial classes: 24h]  second term  French
PHYS-H101	Connaissances fondamentales et éléments de physique Yves LOUIS (Coordinator) and Marc HAELTERMAN 10 credits [lecture: 68h, tutorial classes: 40h, practical work: 12h]  first and second terms  French

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Bloc 2 | BA-IRBI

Cours obligatoires

- BING-F202** [Agro-écosystèmes et systèmes agraires](#) | Marjolein VISSER (Coordinator) and Amaury Beaugendre
 5 credits [lecture: 36h]  second term  French
- BIOL-F201** [Evolution et diversité des eucaryotes : botanique](#) | Pierre Jacques MEERTS (Coordinator) and Jason VLEMINCKX
 5 credits [lecture: 48h, practical work: 12h]  first and second terms  French
- BIOL-F202** [Evolution et diversité des eucaryotes : métazoaires](#) | Jean-Christophe DE BISEAU D'HAUTEVILLE (Coordinator) and Jean-François FLOT
 5 credits [lecture: 60h]  second term  French
- BIOL-F208** [Biochimie et physiologie de la cellule](#) | Vincent RAUSSENS (Coordinator), Véronique KRUYSS and Maud MARTIN
 5 credits [lecture: 60h]  first term  French
- BIOL-F209** [Travaux pratiques de botanique et zoologie](#) | Jean-Christophe DE BISEAU D'HAUTEVILLE (Coordinator), Jean-François FLOT, Pierre Jacques MEERTS and Jason VLEMINCKX
 5 credits [practical work: 60h]  second term  French
- CHIM-F201** [Chimie analytique 1](#) | Thomas DONEUX (Coordinator)
 5 credits [lecture: 24h, practical work: 36h]  first term  French
- ELEC-H201** [Electricité et électronique](#) | Frédéric ROBERT (Coordinator) and Johan GYSELINCK
 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h]  second term  French
- GEOLOG-F2001** [Introduction à la minéralogie et à la pédologie](#) | Steeve BONNEVILLE (Coordinator) and Thomas DROUET DE LA THIBAUDERIE
 5 credits [lecture: 28h, practical work: 12h, field trips: 12h]  first term  French
- INFO-F206** [Informatique](#) | Olivier MARKOWITCH (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 12h, project: 24h]  first term  French
- LANG-F201** [Anglais scientifique I](#) | Alexander CORNFORD (Coordinator), David Albert BEST and Hugh MURPHY
 5 credits [tutorial classes: 48h]  second term  English
- MATH-F215** [Mécanique](#) | Mélanie BERTELSON (Coordinator)
 5 credits [lecture: 30h, tutorial classes: 30h]  second term  French
- MECA-H301** [Systèmes énergétiques : principes de bases et technologies durables](#) | Axel Coussement (Coordinator) and Alessandro PARENTE
 5 credits [lecture: 30h, tutorial classes: 14h, practical work: 16h]  first term  French

Bachelor in Bioengineering

Bloc 3 | BA-IRBI

Cours obligatoires

- BING-F3004 **Anglais scientifique et épistémologie des sciences** | Céline KERMISCH (Coordinator), Alexander CORNFORD and Hugh MURPHY
 5 credits [lecture: 36h, tutorial classes: 24h] first and second terms English
- BING-F301 **Microbiologie générale et environnementale** | Isabelle GEORGE (Coordinator), Sigrid FLAHAUT and Cécile Thonar
 5 credits [lecture: 36h, practical work: 24h] second term French
- BING-F406 **Gestion de projet et projet de recherche** | Dimitri GILIS (Coordinator), Nathalie GYPENS, Christian HERMANS and Patrick SIMON
 5 credits [lecture: 24h, project: 36h] academic year French
- BIOL-F301 **Physiologie et développement des plantes** | Nathalie VERBRUGGEN (Coordinator)
 5 credits [lecture: 36h, practical work: 24h] first and second terms French
- BIOL-F309 **Ecologie** | Pierre Jacques MEERTS (Coordinator) and Jason VLEMINCKX
 5 credits [lecture: 30h, practical work: 30h] first term French
- BIOL-F323 **Génétique: aspects fondamentaux et appliqués** | Bruno ANDRE (Coordinator) and Benoît VANHOLLEBEKE
 5 credits [lecture: 42h] academic year French
- CHIM-H302 **Pollution du milieu physique** | Michel VERBANCK (Coordinator) and Gilles BRUYLANTS
 5 credits [lecture: 40h, tutorial classes: 8h, practical work: 12h] second term French
- CHIM-H314 **Introduction au génie des procédés** | Benoît HAUT (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h, practical work: 12h] second term French
- MATH-F316 **Biogéostatistiques** | Thomas VERDEBOUT (Coordinator)
 5 credits [lecture: 30h, tutorial classes: 24h] second term French
- MATH-H302 **Introduction à l'analyse complexe et au calcul numérique** | Artem NAPOV (Coordinator) and Michel KINNAERT
 5 credits [lecture: 24h, tutorial classes: 30h] first term French
- MECA-H3001 **Fluid mechanics and transfer processes** | Alessandro PARENTE (Coordinator), Frédéric DEBASTE and Richard ESSEX
 5 credits [lecture: 30h, tutorial classes: 24h] first term English

A total of five credits chosen from the following

- BING-F306 (optional) **Travaux pratiques en Biochimie et Biologie Moléculaire** | Guillaume OLDENHOVE (Coordinator) and David PEREZ-MORGA
 5 credits [practical work: 48h] second term French
- ENVI-F454 (optional) **Energie: Société et environnement** | Michel HUART (Coordinator) and Nadine MATTIELLI
 5 credits [lecture: 30h, practical work: 12h, project: 24h] first term French
- ETHI-F201 (optional) **Sciences, éthique, histoire et société** | Grégoire Wallenborn (Coordinator) and Eric MURAILLE
 5 credits [lecture: 48h] second term French
- ETHI-F301 (optional) **Science et Société : analyse de controverses scientifiques** | Patrick MARDULYN (Coordinator) and Grégoire Wallenborn
 5 credits [lecture: 24h, project: 70h] first term French
- PHYS-F517 (optional) **How To Make (almost) Any Experiment Using Digital Fabrication** | Denis TERWAGNE (Coordinator)
 5 credits [lecture: 24h, practical work: 24h] first term French

