



Bachelor in Engineering Sciences

Option Bruxelles

In order to access the Bachelor in Engineering (Civil Engineering or Architecture), students must have a certificate showing they have passed the special admission exam for this programme.

The 2024-2025 programme is subject to change. It is provided for information purposes only.

Programme mnemonic

BA-IRCI

> Option *Bruxelles*: BA-IRCIB

Exists also in

> Option *Charleroi*: BA-IRCIC

Studies level

Bachelor

Learning language

french

Schedule

office hours

Studies category / subcategory

Sciences and technics / Sciences and technics

Campus

Solbosch

It is basically the most general BA course in the French-speaking Region of Belgium

For most courses you will have at your disposal:

- > a specialist laboratory.
- > the different faculty libraries as well as the university central libraries, especially the scientific and technical library.
- > computer rooms.

Teaching methods

As from the first block, teaching methodologies range from classical courses to projects, including exercise and laboratory sessions.

Succeed in your studies

Choose

The information and guidance counsellors at the InfOR-études [<https://www.ulb.be/en/studies-info-desk-1>] service will help you choose your studies throughout the year.

Succeed

Take part in preparatory courses [<https://www.ulb.be/en/studies-info-desk-1>] or get help to succeed [<https://www.ulb.be/en/studies-info-desk-1>], before or during your studies.

Get help

Apply for financial aid, look for accommodation or a student job, get support [<https://www.ulb.be/fr/aides-services-et-accompagnement/aid-services-and-support-1>] for your specific needs.

International/Openness

The Erasmus exchange programme usually takes place during the master's course. However, there are bilateral agreements (double

Programme objectives

Fulfill your ambitions by gaining a grounding in the different aspects of engineering: creating, designing, producing, optimising, securing. You will develop skills ranging from scientific rigour to practical work. You will learn both know-how and interpersonal skills.

Programme's added value

A « multitechnical » approach that enables you to gain an insight into all the theoretical and applied aspects of this field.

A very comprehensive course with a particular focus on individual study and with lectures only making up one element of the course.



degree agreements) enabling you to study abroad from the 3rd block of the bachelor's course to the end of the 1st block of the master's course.

Some of the subsequent masters in engineering are organised jointly with VUB in English

Job opportunities

If you go on to do a Master in Civil Engineering, you will be able to work in the following areas:

- > Corporate engineer
- > Consultant engineer
- > Research engineer
- > Production engineer
- > Engineer in a technical consultancy department.

You could also do research in applied sciences: constructions, chemistry, science of materials, physics, electricity, mechanics, information technologies, biomedical sciences

Contacts

 Philippe.Bogaerts@ulb.ac.be

 +32 2 650 40 93

 <https://polytech.ulb.be/fr/les-etudes/bacheliers>

Jury President

Philippe BOGAERTS

Jury Secretary

Michel KINNAERT
























Bloc 1 | BA-IRCIB | BA-IRCI

Cours obligatoires

- CHIM-H1001 **Chimie générales et procédés durables** | Philippe BOGAERTS (Coordinator) and Benoît HAUT
⌚ 10 credits [lecture: 60h, tutorial classes: 36h, practical work: 24h] 📅 first and second terms 🗨 French
- INFO-H100 **Informatique** | Thierry MASSART (Coordinator)
⌚ 5 credits [lecture: 24h, tutorial classes: 24h, practical work: 12h] 📅 first term 🗨 French
- LANG-H1001 **Anglais I** | Matthew LANGSLEY (Coordinator)
⌚ 2 credits [tutorial classes: 24h] 📅 second term 🗨 English
- MATH-H1002 **Analyse I** | Yves DE SMET (Coordinator)
⌚ 5 credits [lecture: 30h, tutorial classes: 30h] 📅 second term 🗨 French
- MATH-H1003 **Algèbre linéaire et géométrie** | JérémY DOHET-ERALY (Coordinator)
⌚ 8 credits [lecture: 42h, tutorial classes: 54h] 📅 first and second terms 🗨 French
- MATH-H1004 **Éléments d'analyse** | Yves DE SMET (Coordinator)
⌚ 2 credits [lecture: 18h, tutorial classes: 6h] 📅 first term 🗨 French
- MECA-H100 **Mécanique rationnelle I** | Alain DELCHAMBRE (Coordinator)
⌚ 5 credits [lecture: 24h, tutorial classes: 36h] 📅 first and second terms 🗨 French
- PHYS-H1001 **Physique générale I** | Frédéric ROBERT (Coordinator)
⌚ 5 credits [lecture: 30h, tutorial classes: 12h, practical work: 12h] 📅 first term 🗨 French
- PHYS-H1002 **Physique générale II** | Pascal KOCKAERT (Coordinator)
⌚ 5 credits [lecture: 30h, tutorial classes: 12h, practical work: 12h] 📅 second term 🗨 French
- TRAN-H100 **Introduction aux sciences appliquées** | Dimitri GILIS (Coordinator)
⌚ 8 credits [lecture: 36h, tutorial classes: 60h] 📅 first term 🗨 French
- TRAN-H101 **Projet multidisciplinaire I** | Marc HAELTERMAN (Coordinator)
⌚ 5 credits [practical work: 12h, project: 48h] 📅 academic year 🗨 French

Bloc 2 | BA-IRCIB | BA-IRCI

Cours obligatoires

- CHIM-H2001 **Chimie physique, matériaux et fabrication, y compris les visites d'usine** | Stephane GODET (Coordinator), Frédéric DEBASTE, Patrick HENDRICK and Prakash VENKATESAN
 10 credits [lecture: 60h, tutorial classes: 12h, practical work: 48h]  academic year  French
- CNST-H2001 **Mécanique des solides et des structures** | Philippe BOUILLARD (Coordinator)
 5 credits [lecture: 30h, tutorial classes: 30h]  second term  French
- ELEC-H2001 **Electromagnétisme** | Frédéric ROBERT (Coordinator)
 5 credits [lecture: 18h, tutorial classes: 18h, practical work: 24h]  first term  French
- INFO-H2001 **Programmation orientée objet** | Hugues BERSINI (Coordinator)
 5 credits [lecture: 30h, tutorial classes: 30h]  second term  French
- LANG-H2002 **Anglais II** | Matthew LANGSLEY (Coordinator), Marco Vins DELLA MOTTA and Kelsey HULL
 3 credits [lecture: 24h, tutorial classes: 12h]  first term  English
- MATH-H2000 **Analyse II** | Jérémie ROLAND (Coordinator) and Thomas LESSINNES
 8 credits [lecture: 48h, tutorial classes: 48h]  first and second terms  French
- MATH-H2002 **Calcul des probabilités et statistiques** | Yves DE SMET (Coordinator)
 5 credits [lecture: 30h, tutorial classes: 30h]  first term
- MATH-H202 **Analyse numérique** | Artem NAPOV (Coordinator)
 4 credits [lecture: 24h, tutorial classes: 24h]  second term  French
- MECA-H200 **Mécanique rationnelle II** | Pierre LAMBERT (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h, practical work: 12h]  first term  French
- PHYS-H200 **Physique quantique et statistique** | Jean-Marc SPARENBERG (Coordinator)
 5 credits [lecture: 36h, tutorial classes: 24h]  second term  French
- TRAN-H201 **Projet multidisciplinaire II et gestion de projet** | Jérémie ROLAND (Coordinator) and Patrick SIMON
 5 credits [practical work: 12h, project: 120h]  academic year  French

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Bloc 3 | BA-IRCIB | BA-IRCI

Cours obligatoires

- ELEC-H3001 **Electricité appliquée** | Pierre HENNEAUX (Coordinator)
 5 credits [lecture: 30h, tutorial classes: 6h, practical work: 24h] first term French
- MATH-H3001 **Signaux et systèmes** | Michel KINNAERT (Coordinator)
 5 credits [lecture: 30h, tutorial classes: 30h] first term French
- MECA-H3001 **Fluid mechanics and transfer processes** | Alessandro PARENTE (Coordinator) and Frédéric DEBASTE
 5 credits [lecture: 30h, tutorial classes: 24h] first term English
- 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
- TRAN-H3001 **Epistémologie des sciences et éthique de l'ingénieur** | Céline KERMISCH (Coordinator)
 5 credits [lecture: 36h, seminars: 12h, personal assignments: 12h] second term French

An alternative chosen from the seven following

Module Construction

- CNST-H302 (optional) **Soil mechanics** | Alessia Cuccurullo (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h, practical work: 12h] first term English
- CNST-H303 (optional) **Analyse de structures** | Didier Snoeck (Coordinator)
 6 credits [lecture: 36h, tutorial classes: 36h] first term French
- CNST-H311 (optional) **Technologie et comportement du béton et des matériaux cimentaires** | Stéphanie STAQUET (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h] second term French
- CNST-H312 (optional) **Geology and engineering geology** | Pierre GERARD (Coordinator)
 5 credits [lecture: 24h, practical work: 36h] second term English
- CNST-Y302 (optional) **Civil engineering hydraulics** | Gerlinde LEFEVER (Coordinator) and Didier Snoeck
 4 credits [lecture: 24h, tutorial classes: 24h] first term English
- ELEC-H310 (optional) **Digital electronics** | Dragomir MILOJEVIC (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h] second term English
- PROJ-H305 (optional) **Projet de conception des structures** | Didier Snoeck (Coordinator) and Alessia Cuccurullo
 5 credits [project: 150h] second term French

or

Module Electromécanique

- ELEC-H301 (optional) **Electronique appliquée** | François QUITIN (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h] first term French

ELEC-H310 (optional) **Digital electronics** | Dragomir MILOJEVIC (Coordinator)
⌚ 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h] 📅 second term 🗨 English

ELEC-H312 (optional) **Power electronics** | Johan GYSELINCK (Coordinator)
⌚ 5 credits [lecture: 24h, practical work: 24h] 📅 second term 🗨 English

ELEC-H313 (optional) **Instrumentation** | Antoine NONCLERCQ (Coordinator)
⌚ 5 credits [lecture: 36h, practical work: 24h] 📅 second term 🗨 French

MATH-H304 (optional) **Automatique** | Michel KINNAERT (Coordinator)
⌚ 5 credits [lecture: 30h, practical work: 30h] 📅 second term 🗨 French

MECA-H303 (optional) **Cinématique et dynamique des machines** | Arnaud DERAEMAER (Coordinator), Alain DELCHAMBRE and Patrick HENDRICK
⌚ 5 credits [lecture: 24h, practical work: 36h] 📅 first term 🗨 French

MECA-H305 (optional) **Fluid mechanics II** | Thierry MAGIN (Coordinator)
⌚ 5 credits [lecture: 36h, tutorial classes: 12h, practical work: 12h] 📅 second term 🗨 English

or

Module Informatique

ELEC-H301 (optional) **Electronique appliquée** | François QUITIN (Coordinator)
⌚ 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h] 📅 first term 🗨 French

ELEC-H310 (optional) **Digital electronics** | Dragomir MILOJEVIC (Coordinator)
⌚ 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h] 📅 second term 🗨 English

INFO-F201 (optional) **Systèmes d'exploitation** | Joël GOOSSENS (Coordinator) and Olivier MARKOWITZ
⌚ 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 12h, project: 30h] 📅 first term 🗨 French

INFO-F307 (optional) **Génie logiciel et gestion de projets** | Frédéric PLUQUET (Coordinator)
⌚ 5 credits [lecture: 24h, practical work: 7h, project: 89h] 📅 second term 🗨 French

INFO-H3000 (optional) **Recherche opérationnelle** | Yves DE SMET (Coordinator)
⌚ 5 credits [lecture: 24h, tutorial classes: 24h, personal assignments: 12h] 📅 second term 🗨 French

INFO-H303 (optional) **Bases de données** | Esteban ZIMANYI (Coordinator)
⌚ 5 credits [lecture: 24h, tutorial classes: 24h, practical work: 12h] 📅 second term 🗨 French

INFO-H304 (optional) **Compléments de programmation et d'algorithmique** | Jérémie ROLAND (Coordinator)
⌚ 5 credits [lecture: 24h, tutorial classes: 24h, personal assignments: 30h] 📅 first term 🗨 French

or

Module physique

ELEC-H301 (optional) **Electronique appliquée** | François QUITIN (Coordinator)
⌚ 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h] 📅 first term 🗨 French



ELEC-H304 (optional) **Physique des télécommunications** | Philippe DE DONCKER (Coordinator)
⌚ 5 credits [lecture: 36h, tutorial classes: 12h, practical work: 12h] 📅 second term 🗨 French



MATH-H301 (optional) **Compléments de mathématiques et de calcul numérique** | Artem NAPOV (Coordinator), Thomas LESSINNES and Jérémie ROLAND
⌚ 5 credits [lecture: 30h, tutorial classes: 12h, practical work: 18h] 📅 first term 🗨 French

MATH-H304 (optional) **Automatique** | Michel KINNAERT (Coordinator)
⌚ 5 credits [lecture: 30h, practical work: 30h] 📅 second term 🗨 French

PHYS-H300 (optional) **Physique des semi-conducteurs et de l'état solide** | Yves LOUIS (Coordinator) and Nicolas PAULY
⌚ 5 credits [lecture: 36h, tutorial classes: 12h, practical work: 12h] 📅 second term 🗨 French







PHYS-H301 **Mécanique quantique I** | Nicolas CERF (Coordinator)
(optional) 5 credits [lecture: 24h, tutorial classes: 36h]  second term  French

PHYS-H302 **Éléments d'optique physique**
(optional) 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h]  second term  French



or


Module Sciences biomédicales



BIME-H302 **Biologie générale et anatomo-physiologie humaine** | Hassan JIJAKLI (Coordinator) and Serge VAN SINT JAN
(optional) 10 credits [lecture: 84h, practical work: 36h]  second term  French

CHIM-H312 **Biological Chemistry** | Kristin BARTIK (Coordinator)
(optional) 5 credits [lecture: 36h, tutorial classes: 24h]  first term  English

ELEC-H3002 **Instrumentation et Automatique** | Michel KINNAERT (Coordinator) and Antoine NONCLERCQ
(optional) 5 credits [lecture: 48h, practical work: 12h]  second term  French



ELEC-H301 **Electronique appliquée** | François QUITIN (Coordinator)
(optional) 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h]  first term  French

INFO-H304 **Compléments de programmation et d'algorithmique** | Jérémie ROLAND (Coordinator)
(optional) 5 credits [lecture: 24h, tutorial classes: 24h, personal assignments: 30h]  first term  French

PROJ-H3000 **Projet intégré biomédical** | Antoine NONCLERCQ (Coordinator) and Michel KINNAERT
(optional) 5 credits [project: 150h]  second term  French



or

Module Electronique et télécommunication

ELEC-H301 **Electronique appliquée** | François QUITIN (Coordinator)
(optional) 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h]  first term  French



ELEC-H304 **Physique des télécommunications** | Philippe DE DONCKER (Coordinator)
(optional) 5 credits [lecture: 36h, tutorial classes: 12h, practical work: 12h]  second term  French

ELEC-H305 **Circuits logiques et numériques** | Dragomir MILOJEVIC (Coordinator)
(optional) 5 credits [lecture: 30h, tutorial classes: 30h]  first term  French

ELEC-H309 **Projet intégré** | Frédéric ROBERT (Coordinator), Dragomir MILOJEVIC, Antoine NONCLERCQ and François QUITIN
(optional) 5 credits [project: 150h]  second term  French

ELEC-H311 **Signaux et systèmes de télécommunications** | François HORLIN (Coordinator)
(optional) 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h]  first term  French



ELEC-H314 **Instrumentation et électronique analogique** | Antoine NONCLERCQ (Coordinator) and François QUITIN
(optional) 5 credits [lecture: 36h, practical work: 24h]  second term  French

MATH-H304 **Automatique** | Michel KINNAERT (Coordinator)
(optional) 5 credits [lecture: 30h, practical work: 30h]  second term  French

or

Module Chimie et science des matériaux



CHIM-H302 **Pollution du milieu physique** | Michel VERBANCK (Coordinator) and Gilles BRUYLANTS
(optional) 5 credits [lecture: 40h, tutorial classes: 8h, practical work: 12h]  second term  French

CHIM-H310 **Chimie physique moléculaire** | Kristin BARTIK (Coordinator) and Nathalie VAECK
(optional) 5 credits [lecture: 42h, tutorial classes: 18h]  first term  French



CHIM-H314
(optional)

Introduction au génie des procédés | Benoît HAUT (Coordinator)

5 credits [lecture: 24h, tutorial classes: 24h, practical work: 12h]  second term  French

CHIM-H316
(optional)

Matériaux et chimie inorganique : mise en oeuvre et analyse | Marie-Paule DELPLANCHE (Coordinator) and Gilles BRUYLANTS

10 credits [lecture: 60h, tutorial classes: 12h, practical work: 48h]  academic year  French

ELEC-H301
(optional)

Electronique appliquée | François QUITIN (Coordinator)

5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h]  first term  French

MATH-H304
(optional)

Automatique | Michel KINNAERT (Coordinator)

5 credits [lecture: 30h, practical work: 30h]  second term  French

