

# Master of science in Electromechanical Engineering

Focus Professional

## Bloc 1 | M-IREMR | MA-IREM

### Projects - Block 1

*One course chosen from the following*

- PROJ-H405  
(optional) [Project in Electromechanical Engineering](#) | Emanuele GARONE (Coordinator), Aurélie Bellemans, Svend Bram, Alain DELCHAMBRE, Johan GYSELINCK, Patrick HENDRICK, Pierre HENNEAUX, Joeri VAN MIERLO and Bram VANDERBORGHT  
⌚ 5 credits [personal assignments: 150h] 📅 first and second terms 🗨 English
- PROJ-H417  
(optional) [Projet coopération au développement / Development cooperation project](#) | Antoine NONCLERCQ (Coordinator)  
⌚ 5 credits [project: 150h] 📅 first and second terms 🗨 French  
Only on selection : see the Development Unit of the Polytechnic School of Brussels (<http://polytech.ulb.be/en/international/development-cooperation>)
- PROJ-H418  
(optional) [Hands-on learning: project manager \(chef de projet\)](#) | Peter BERKE (Coordinator)  
⌚ 5 credits [project: 150h] 📅 first and second terms 🗨 French
- PROJ-H420  
(optional) [Eco-marathon project](#) | Patrick HENDRICK (Coordinator) and Johan GYSELINCK  
⌚ 5 credits [project: 150h] 📅 first and second terms 🗨 English

*An option chosen from (the same in bloc 1 and bloc 2) :*

- M-IREMR-A [Module Aeronautics](#) > *page*
- M-IREMR-E [Module Energy](#) > *page*
- M-IREMR-M [Module Robotics and Mechatronics - Construction](#) > *page*
- M-IREMR-S [Module Sustainable Transport and Automotive Engineering](#) > *page*

# Master of science in Electromechanical Engineering

Focus Professional

## Bloc 2 | M-IREMR | MA-IREM

### Master Thesis - Block 2

MEMO-H502

[Master thesis in Electromechanical Engineering](#) | Patrick HENDRICK (Coordinator), Aurélie Bellemans, Svend Bram, Alain DELCHAMBRE, Emanuele GARONE, Johan GYSELINCK, Pierre HENNEAUX, Joeri VAN MIERLO and Bram VANDERBORGHT

🕒 24 credits [mfe/tfe: 600h] 📅 academic year 🗨️ English

*An option chosen from (the same in bloc 1 and bloc 2):*

M-IREMR-A [Module Aeronautics > page](#)

M-IREMR-E [Module Energy > page](#)

M-IREMR-M [Module Robotics and Mechatronics - Construction > page](#)

M-IREMR-S [Module Sustainable Transport and Automotive Engineering > page](#)

# Master of science in Electromechanical Engineering

Options | MA-IREM

## Module Aeronautics | M-IREMR-A

### Bloc 1

#### Partially common courses - Block 1

- CNST-H421 (option) **Structural analysis and finite elements** | Peter BERKE (Coordinator) and Lincy Pyl  
 5 credits [lecture: 36h, tutorial classes: 24h] 📅 first term 🗨 English
- MECA-H406 (option) **Composite structures** | Patrick HENDRICK (Coordinator)  
 3 credits [lecture: 18h, tutorial classes: 18h] 📅 second term 🗨 English
- MECA-H411 (option) **Mechanical Vibrations** | Arnaud DERAEMAEKER (Coordinator) and Wout Weijtjens  
 5 credits [lecture: 36h, tutorial classes: 24h] 📅 first term 🗨 English
- MECA-H420 (option) **Piston Engines** | Axel Coussement (Coordinator)  
 3 credits [lecture: 26h, practical work: 8h] 📅 first term 🗨 English

#### Specific courses

- MECA-H407 (option) **Computational Modelling in Aerospace** | Axel Coussement (Coordinator)  
 3 credits [lecture: 30h, tutorial classes: 6h, practical work: 24h] 📅 second term 🗨 English
- MECA-H421 (option) **Aircraft Structures**  
 4 credits [lecture: 24h, tutorial classes: 24h] 📅 second term 🗨 English
- MECA-H423 (option) **Aerospace Seminars : Sustainability, Space & Drones** | Thierry MAGIN (Coordinator)  
 3 credits [lecture: 18h, personal assignments: 18h] 📅 second term 🗨 English
- MECA-Y402 (option) **Aerodynamics** | Tim De Troyer (Coordinator), Thierry MAGIN and Mark RUNACRES  
 5 credits [lecture: 36h, tutorial classes: 24h] 📅 first term 🗨 English

#### Common courses - Block 1

- ELEC-H406 (option) **Electrical drives** | Johan GYSELINCK (Coordinator) and Omar HEGAZY  
 5 credits [lecture: 24h, practical work: 36h] 📅 second term 🗨 English
- MATH-H407 (option) **Control system design** | Emanuele GARONE (Coordinator)  
 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h] 📅 first term 🗨 English
- MECA-H402 (option) **Turbomachinery** | Patrick HENDRICK (Coordinator)  
 5 credits [lecture: 36h, tutorial classes: 20h, practical work: 4h] 📅 second term 🗨 English
- MECA-H409 (option) **Design methodology** | Alain DELCHAMBRE (Coordinator)  
 5 credits [lecture: 24h, tutorial classes: 24h, personal assignments: 12h] 📅 first term 🗨 English
- MECA-H419 (option) **Data-Driven Engineering** | Alessandro PARENTE (Coordinator), Axel Coussement, Emanuele GARONE, Omar HEGAZY, Alassane Ballé NDIAYE and Mehrdad TERATANI  
 4 credits [lecture: 36h, tutorial classes: 12h] 📅 second term 🗨 English

### Bloc 2

#### Specific courses - Block 2

- MECA-H506 (option) **Aircraft performance and stability** | Axel Coussement (Coordinator)  
 4 credits [lecture: 28h, tutorial classes: 24h] 📅 first term 🗨 English

- MECA-H507 (option) **Aircraft propulsion** | Patrick HENDRICK (Coordinator)  
⌚ 5 credits [lecture: 36h, tutorial classes: 24h] 📅 first term 🗨 English
- MECA-H508 (option) **Aircraft conceptual design** | Axel Coussement (Coordinator)  
⌚ 5 credits [lecture: 24h, practical work: 36h] 📅 second term 🗨 English
- MECA-H522 (option) **Applied Computational Fluid Dynamics** | Mark RUNACRES (Coordinator) and Aurélie Bellemans  
⌚ 3 credits [lecture: 12h, tutorial classes: 12h, personal assignments: 20h] 📅 first term 🗨 English
- MECA-Y408 (option) **Avionics**  
⌚ 3 credits [lecture: 30h, practical work: 24h] 📅 second term 🗨 English

## Elective Courses

*A total of 11 credits chosen from the following*

- CNST-H528 (option/optional) **Advanced computational structural mechanics** | Thierry MASSART (Coordinator)  
⌚ 4 credits [lecture: 12h, practical work: 36h] 📅 first term 🗨 English
- ELEC-H509 (option/optional) **Optimization-based Control Design** | Emanuele GARONE (Coordinator)  
⌚ 4 credits [lecture: 24h, tutorial classes: 24h] 📅 first term 🗨 English
- GEST-Y503 (option/optional) **EUTOPIA learning unit : Technological business development project** | Thomas Crispeels (Coordinator)  
⌚ 3 credits [tutorial classes: 13h, personal assignments: 71h] 📅 academic year 🗨 English
- MATH-H503 (option/optional) **Model-Based and Data-Driven Fault Detection and Isolation** | Michel KINNAERT (Coordinator)  
⌚ 4 credits [lecture: 24h, practical work: 24h] 📅 second term 🗨 English
- MECA-H523 (option/optional) **Helicopters** | Elmar RECKER (Coordinator)  
⌚ 3 credits [lecture: 24h, tutorial classes: 12h] 📅 second term 🗨 English
- MECA-H534 (option/optional) **Acoustics** | Jean-Louis MIGEOT (Coordinator)  
⌚ 4 credits [lecture: 24h, tutorial classes: 24h] 📅 first term 🗨 English
- MECA-Y014 (option/optional) **Aircraft systems** | Tim De Troyer (Coordinator)  
⌚ 4 credits [lecture: 30h, project: 12h] 📅 first term 🗨 English
- MECA-Y500 (option/optional) **Experimental fluid mechanics** | Jeroen VAN BEECK (Coordinator) and Tim De Troyer  
⌚ 3 credits [lecture: 12h, practical work: 24h] 📅 second term 🗨 English
- MECA-Y501 (option/optional) **Aircraft specification and certification** | Jean-Jacques SPEYER (Coordinator)  
⌚ 3 credits [lecture: 18h, personal assignments: 18h] 📅 second term 🗨 English
- MECA-Y507 (option/optional) **Wind Turbine Aerodynamics and Design** | Mark RUNACRES (Coordinator)  
⌚ 4 credits [lecture: 21h, practical work: 21h] 📅 first term 🗨 English
- STAG-H501 (option/optional) **Internship (60 days)** | Frédéric ROBERT (Coordinator)  
⌚ 10 credits [personal assignments: 300h] 📅 first term 🗨 English
- STAG-H502 (option/optional) **Internship (40 days)** | Lincy Pyl (Coordinator)  
⌚ 6 credits [personal assignments: 180h] 📅 first term 🗨 English

## Free elective courses

Students have also the opportunity to choose courses among the courses of the 'transversal modules' of the School.

English : LANG-H500

Engineering and society : PROJ-H421 - GEST-H509 - BIME-G5505 - PHYS-F517

Sustainability : GEST-S492 - ENVI-F405 - CHIM-H504 - ENVI-F452 - ENVI-F454 - ELEC-Y514

Finance, accounting, management, marketing, logistics and quality : GEST-S101 - GEST-S318 - GEST-S421 - GEST-Y501 - GEST-H501 - GEST-H502

Participation to a summer school : EDUC-H601



## Free elective courses

*Up to six credits chosen from the following*

BIME-G5505 (option/optional)	<b>Interfaculty and interdisciplinary program in Healthcare Innovation</b>   Hilde STEVENS (Coordinator) ⌚ 5 credits [lecture: 40h, tutorial classes: 20h] 📅 second term 🗨 English
CHIM-H504 (option/optional)	<b>Engineering aspects of circular economy</b>   Prakash VENKATESAN (Coordinator) ⌚ 5 credits [lecture: 24h, practical work: 36h] 📅 second term 🗨 English
DROI-C5174 (option/optional)	<b>Approche interdisciplinaire du droit de la propriété intellectuelle/Interdisciplinary Approach to In</b>   Julien CABAY (Coordinator) ⌚ 5 credits [lecture: 24h] 📅 first term 🗨 English/French
EDUC-H601 (option/optional)	<b>Summer School</b>   Johan GYSELINCK (Coordinator) ⌚ 5 credits [personal assignments: 5h] 📅 academic year 🗨 English
ELEC-Y514 (option/optional)	<b>Sustainability : an interdisciplinary Approach</b>   Cathy MACHARIS (Coordinator) and Waldo Galle ⌚ 6 credits [lecture: 36h, practical work: 24h, personal assignments: 100h] 📅 academic year 🗨 English
ENVI-F405 (option/optional)	<b>Climat: sciences et politiques</b>   Frank PATTYN (Coordinator) and Louise Knops ⌚ 5 credits [lecture: 40h] 📅 second term 🗨 French
ENVI-F452 (option/optional)	<b>Environmental impact analysis and management</b>   Wouter ACHTEN (Coordinator) ⌚ 5 credits [lecture: 24h, practical work: 12h, project: 24h] 📅 first term 🗨 English/French
ENVI-F454 (option/optional)	<b>Energie: Société et environnement</b>   Michel HUART (Coordinator) and Nadine MATTIELLI ⌚ 5 credits [lecture: 30h, practical work: 12h, project: 24h] 📅 first term 🗨 French
GEST-H501 (option/optional)	<b>Logistics Engineering and Management</b>   Alassane Ballé NDIAYE (Coordinator) ⌚ 5 credits [lecture: 12h, tutorial classes: 36h] 📅 first term 🗨 English
GEST-H502 (option/optional)	<b>Supply Chain Performance Analytics</b>   Alassane Ballé NDIAYE (Coordinator) ⌚ 5 credits [lecture: 12h, tutorial classes: 36h, personal assignments: 12h] 📅 second term 🗨 English
GEST-H509 (option/optional)	<b>Ethique de l'ingénieur</b> ⌚ 3 credits [lecture: 12h, tutorial classes: 12h, practical work: 12h] 📅 second term 🗨 French
GEST-S101 (option/optional)	<b>Comptabilité financière</b>   Laurent GHEERAERT (Coordinator) and Gilles GEVERS ⌚ 5 credits [lecture: 36h, tutorial classes: 8h] 📅 second term 🗨 French
GEST-S318 (option/optional)	<b>Introduction to theoretical finance</b>   Laurent GHEERAERT (Coordinator) ⌚ 5 credits [lecture: 24h, tutorial classes: 24h] 📅 second term 🗨 English
GEST-S421 (option/optional)	<b>Entrepreneurial ecosystems</b>   Judith BEHRENS (Coordinator) ⌚ 5 credits [lecture: 24h, tutorial classes: 24h] 📅 second term 🗨 English
GEST-S492 (option/optional)	<b>Energy policy, sustainability &amp; management</b>   Adel EL Gammal (Coordinator), Julien BLONDEAU and Michel HUART ⌚ 5 credits [lecture: 36h, seminars: 24h] 📅 first term 🗨 English
GEST-Y501 (option/optional)	<b>Business Management and Entrepreneurship</b>   Marc GOLDCHSTEIN (Coordinator) ⌚ 3 credits [lecture: 33h] 📅 first term 🗨 English
LANG-H500 (option/optional)	<b>English for professional purposes</b>   Alexander CORNFORD (Coordinator) ⌚ 5 credits [tutorial classes: 48h, personal assignments: 12h] 📅 first and second terms 🗨 English
PROJ-H421 (option/optional)	<b>Projet polydaire: expériences didactiques innovantes pour le secondaire</b>   Simon-Pierre GORZA (Coordinator) ⌚ 5 credits [project: 150h] 📅 academic year 🗨 French

## Module Energy | M-IREMR-E

### Bloc 1

## Partially common courses

MECA-H420 (option)	<b>Piston Engines</b>   Axel Coussement (Coordinator) ⌚ 3 credits [lecture: 26h, practical work: 8h] 📅 first term 🗨 English
-----------------------	--



MECA-Y404 (option) **Fuel cells and batteries** | Annick HUBIN (Coordinator)  
⌚ 4 credits [lecture: 24h, practical work: 24h] 📅 first term 🗨 English

## Specific courses

ELEC-H413 (option) **Electric Power Systems I** | Pierre HENNEAUX (Coordinator), Rafael FEITO-KICZAK and Jonathan SPROOTEN  
⌚ 5 credits [lecture: 30h, practical work: 30h] 📅 first term 🗨 English

ELEC-H419 (option) **Multi-Physics Modelling and Simulation** | Johan GYSELINCK (Coordinator)  
⌚ 4 credits [lecture: 12h, practical work: 36h] 📅 first term 🗨 English

ELEC-Y401 (option) **Nuclear energy and reactors** | Peter Baeten (Coordinator)  
⌚ 5 credits [lecture: 36h, tutorial classes: 12h, practical work: 12h] 📅 second term 🗨 English

MECA-H417 (option) **Sustainable energy** | Michel HUART (Coordinator) and Julien BLONDEAU  
⌚ 3 credits [lecture: 36h] 📅 first term 🗨 English

MECA-H418 (option) **Heat transfer and combustion** | Alessandro PARENTE (Coordinator)  
⌚ 4 credits [lecture: 24h, seminars: 24h] 📅 second term 🗨 English

MECA-Y409 (option) **Heating, ventilation and air conditioning** | Svend Bram (Coordinator) and Julien BLONDEAU  
⌚ 3 credits [lecture: 12h, practical work: 18h] 📅 second term 🗨 English

## Common courses - Block 1

Options 'Energy' and 'Aeronautics' : MECA-H402 - Turbomachinery is a 5 ECTS course.

Options 'Sustainable Transport' and 'Robotics' : MECA-H402 - Turbomachinery is a 3 ECTS course.

ELEC-H406 (option) **Electrical drives** | Johan GYSELINCK (Coordinator) and Omar HEGAZY  
⌚ 5 credits [lecture: 24h, practical work: 36h] 📅 second term 🗨 English

MATH-H407 (option) **Control system design** | Emanuele GARONE (Coordinator)  
⌚ 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h] 📅 first term 🗨 English

MECA-H402 (option) **Turbomachinery** | Patrick HENDRICK (Coordinator)  
⌚ 3 credits [lecture: 24h, tutorial classes: 12h] 📅 second term 🗨 English

MECA-H409 (option) **Design methodology** | Alain DELCHAMBRE (Coordinator)  
⌚ 5 credits [lecture: 24h, tutorial classes: 24h, personal assignments: 12h] 📅 first term 🗨 English

MECA-H419 (option) **Data-Driven Engineering** | Alessandro PARENTE (Coordinator), Axel Coussement, Emanuele GARONE, Omar HEGAZY, Alassane Ballé NDIAYE and Mehrdad TERATANI  
⌚ 4 credits [lecture: 36h, tutorial classes: 12h] 📅 second term 🗨 English

## Bloc 2

### Partially common courses - Block 2

PHYS-H514 (option) **Reliability and safety** | Pierre-Etienne LABEAU (Coordinator)  
⌚ 3 credits [lecture: 22h, tutorial classes: 14h] 📅 first term 🗨 English

## Electives courses

Students have also the opportunity to choose courses among the courses of the 'transversal modules' of the School.

*A total of 17 credits chosen from the following*

ELEC-H412 (option/optional) **Design and control of electrical machines** | Johan GYSELINCK (Coordinator)  
⌚ 4 credits [lecture: 12h, tutorial classes: 18h, practical work: 18h] 📅 first term 🗨 English

ELEC-H543 (option/optional) **Electric Power Systems II** | Pierre HENNEAUX (Coordinator)  
⌚ 5 credits [lecture: 30h, practical work: 30h] 📅 second term 🗨 English



MATH-H503 (option/optional)	<b>Model-Based and Data-Driven Fault Detection and Isolation</b>   Michel KINNAERT (Coordinator) ⌚ 4 credits [lecture: 24h, practical work: 24h] 📅 second term 🗨 English
MATH-H510 (option/optional)	<b>Risk-based methodologies for energy systems</b>   Pierre-Etienne LABEAU (Coordinator) and Pierre HENNEAUX ⌚ 4 credits [lecture: 24h, personal assignments: 24h] 📅 second term 🗨 English
MECA-H532 (option/optional)	<b>Advanced internal combustion engines</b>   Axel Coussement (Coordinator) ⌚ 3 credits [lecture: 12h, tutorial classes: 14h, practical work: 16h] 📅 second term 🗨 English
MECA-Y507 (option/optional)	<b>Wind Turbine Aerodynamics and Design</b>   Mark RUNACRES (Coordinator) ⌚ 4 credits [lecture: 21h, practical work: 21h] 📅 first term 🗨 English
PHYS-H408 (option/optional)	<b>Operation, control and safety of nuclear systems</b>   Pierre-Etienne LABEAU (Coordinator), David FRESON and Arnaud MEERT ⌚ 5 credits [lecture: 30h, practical work: 12h, seminars: 6h, field trips: 20h] 📅 second term 🗨 English
STAG-H501 (option/optional)	<b>Internship (60 days)</b>   Frédéric ROBERT (Coordinator) ⌚ 10 credits [personal assignments: 300h] 📅 first term 🗨 English
STAG-H502 (option/optional)	<b>Internship (40 days)</b>   Lincy Pyl (Coordinator) ⌚ 6 credits [personal assignments: 180h] 📅 first term 🗨 English

## Free elective courses - Block2

Students have also the opportunity to choose courses among the courses of the 'transversal modules' of the School.

English : LANG-H500

Engineering and society : PROJ-H421 - GEST-H509 - BIME-G5505 - PHYS-F517

Sustainability : GEST-S492 - ENVI-F405 - CHIM-H504 - ENVI-F452 - ENVI-F454 - ELEC-Y514

Finance, accounting, management, marketing, logistics and quality : GEST-S101 - GEST-S318 - GEST-S421 - GEST-Y501 GEST-H501 - GEST-H502

Participation to a summer school : EDUC-H601

## Free elective courses

*Up to six credits chosen from the following*

BIME-G5505 (option/optional)	<b>Interfaculty and interdisciplinary program in Healthcare Innovation</b>   Hilde STEVENS (Coordinator) ⌚ 5 credits [lecture: 40h, tutorial classes: 20h] 📅 second term 🗨 English
CHIM-H504 (option/optional)	<b>Engineering aspects of circular economy</b>   Prakash VENKATESAN (Coordinator) ⌚ 5 credits [lecture: 24h, practical work: 36h] 📅 second term 🗨 English
DROI-C5174 (option/optional)	<b>Approche interdisciplinaire du droit de la propriété intellectuelle/Interdisciplinary Approach to In</b>   Julien CABAY (Coordinator) ⌚ 5 credits [lecture: 24h] 📅 first term 🗨 English/French
EDUC-H601 (option/optional)	<b>Summer School</b>   Johan GYSELINCK (Coordinator) ⌚ 5 credits [personal assignments: 5h] 📅 academic year 🗨 English
ELEC-Y514 (option/optional)	<b>Sustainability : an interdisciplinary Approach</b>   Cathy MACHARIS (Coordinator) and Waldo Galle ⌚ 6 credits [lecture: 36h, practical work: 24h, personal assignments: 100h] 📅 academic year 🗨 English
ENVI-F405 (option/optional)	<b>Climat: sciences et politiques</b>   Frank PATTYN (Coordinator) and Louise Knops ⌚ 5 credits [lecture: 40h] 📅 second term 🗨 French
ENVI-F452 (option/optional)	<b>Environmental impact analysis and management</b>   Wouter ACHTEN (Coordinator) ⌚ 5 credits [lecture: 24h, practical work: 12h, project: 24h] 📅 first term 🗨 English/French
ENVI-F454 (option/optional)	<b>Energie: Société et environnement</b>   Michel HUART (Coordinator) and Nadine MATTIELLI ⌚ 5 credits [lecture: 30h, practical work: 12h, project: 24h] 📅 first term 🗨 French
GEST-H501 (option/optional)	<b>Logistics Engineering and Management</b>   Alassane Ballé NDIAYE (Coordinator) ⌚ 5 credits [lecture: 12h, tutorial classes: 36h] 📅 first term 🗨 English



GEST-H502 (option/optional)	<b>Supply Chain Performance Analytics</b>   Alassane Ballé NDIAYE (Coordinator) ⌚ 5 credits [lecture: 12h, tutorial classes: 36h, personal assignments: 12h] 📅 second term 🗨 English
GEST-H509 (option/optional)	<b>Ethique de l'ingénieur</b> ⌚ 3 credits [lecture: 12h, tutorial classes: 12h, practical work: 12h] 📅 second term 🗨 French
GEST-S101 (option/optional)	<b>Comptabilité financière</b>   Laurent GHEERAERT (Coordinator) and Gilles GEVERS ⌚ 5 credits [lecture: 36h, tutorial classes: 8h] 📅 second term 🗨 French
GEST-S318 (option/optional)	<b>Introduction to theoretical finance</b>   Laurent GHEERAERT (Coordinator) ⌚ 5 credits [lecture: 24h, tutorial classes: 24h] 📅 second term 🗨 English
GEST-S421 (option/optional)	<b>Entrepreneurial ecosystems</b>   Judith BEHRENS (Coordinator) ⌚ 5 credits [lecture: 24h, tutorial classes: 24h] 📅 second term 🗨 English
GEST-S492 (option/optional)	<b>Energy policy, sustainability &amp; management</b>   Adel EL Gammal (Coordinator), Julien BLONDEAU and Michel HUART ⌚ 5 credits [lecture: 36h, seminars: 24h] 📅 first term 🗨 English
GEST-Y501 (option/optional)	<b>Business Management and Entrepreneurship</b>   Marc GOLDCHSTEIN (Coordinator) ⌚ 3 credits [lecture: 33h] 📅 first term 🗨 English
LANG-H500 (option/optional)	<b>English for professional purposes</b>   Alexander CORNFORD (Coordinator) ⌚ 5 credits [tutorial classes: 48h, personal assignments: 12h] 📅 first and second terms 🗨 English
PROJ-H421 (option/optional)	<b>Projet polydaire: expériences didactiques innovantes pour le secondaire</b>   Simon-Pierre GORZA (Coordinator) ⌚ 5 credits [project: 150h] 📅 academic year 🗨 French

## Specific courses - Block 2

ELEC-H508 (option)	<b>Thermal power plants</b>   Julien BLONDEAU (Coordinator) ⌚ 4 credits [lecture: 34h, tutorial classes: 6h] 📅 second term 🗨 English
ELEC-H529 (option)	<b>Electric traction</b>   Omar HEGAZY (Coordinator) ⌚ 3 credits [lecture: 18h, practical work: 18h] 📅 first term 🗨 English
GEST-H506 (option)	<b>Energy policy and management</b>   Pierre HENNEAUX (Coordinator), Adel EL Gammal and Benjamin GENET ⌚ 5 credits [lecture: 42h, practical work: 18h] 📅 first and second terms 🗨 English
MECA-H414 (option)	<b>Renewable energy technology</b>   Julien BLONDEAU (Coordinator) and Johan GYSELINCK ⌚ 4 credits [lecture: 24h, practical work: 24h] 📅 first term 🗨 English

## Module Robotics and Mechatronics - Construction | M-IREMR-M

### Bloc 1

### Partially common courses

CNST-H421 (option)	<b>Structural analysis and finite elements</b>   Peter BERKE (Coordinator) and Lincy Pyl ⌚ 5 credits [lecture: 36h, tutorial classes: 24h] 📅 first term 🗨 English
MECA-H411 (option)	<b>Mechanical Vibrations</b>   Arnaud DERAEMAER (Coordinator) and Wout Weijtjens ⌚ 5 credits [lecture: 36h, tutorial classes: 24h] 📅 first term 🗨 English

### Specific courses

ELEC-H410 (option)	<b>Real-time computer systems</b>   François QUITIN (Coordinator) ⌚ 5 credits [lecture: 24h, practical work: 36h] 📅 second term 🗨 English
ELEC-H516 (option)	<b>Industrial Automation</b>   Dragomir MILOJEVIC (Coordinator) ⌚ 3 credits [lecture: 12h, practical work: 24h] 📅 first term 🗨 English





- MECA-H410 (option) **Robotics 1** | Michael VANDAMME (Coordinator)  
⌚ 5 credits [lecture: 36h, tutorial classes: 24h] 📅 second term 🗨 English
- MECA-Y403 (option) **Mechatronics 1** | Bram VANDERBORGHT (Coordinator)  
⌚ 5 credits [lecture: 21h, practical work: 30h, personal assignments: 40h] 📅 first term 🗨 English
- MECA-Y410 (option) **Machine elements** | Frank DAERDEN (Coordinator)  
⌚ 5 credits [lecture: 24h, tutorial classes: 24h, practical work: 12h] 📅 second term 🗨 English

## Common courses - Block 1

Options 'Energy' and 'Aeronautics' : MECA-H402 - Turbomachinery is a 5 ECTS course.

Options 'Sustainable Transport' and 'Robotics' : MECA-H402 - Turbomachinery is a 3 ECTS course.

- ELEC-H406 (option) **Electrical drives** | Johan GYSELINCK (Coordinator) and Omar HEGAZY  
⌚ 5 credits [lecture: 24h, practical work: 36h] 📅 second term 🗨 English
- MATH-H407 (option) **Control system design** | Emanuele GARONE (Coordinator)  
⌚ 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h] 📅 first term 🗨 English
- MECA-H402 (option) **Turbomachinery** | Patrick HENDRICK (Coordinator)  
⌚ 3 credits [lecture: 24h, tutorial classes: 12h] 📅 second term 🗨 English
- MECA-H409 (option) **Design methodology** | Alain DELCHAMBRE (Coordinator)  
⌚ 5 credits [lecture: 24h, tutorial classes: 24h, personal assignments: 12h] 📅 first term 🗨 English
- MECA-H419 (option) **Data-Driven Engineering** | Alessandro PARENTE (Coordinator), Axel Coussement, Emanuele GARONE, Omar HEGAZY, Alassane Ballé NDIAYE and Mehrdad TERATANI  
⌚ 4 credits [lecture: 36h, tutorial classes: 12h] 📅 second term 🗨 English

## Bloc 2

### Partially common courses

- MECA-H406 (option) **Composite structures** | Patrick HENDRICK (Coordinator)  
⌚ 3 credits [lecture: 18h, tutorial classes: 18h] 📅 second term 🗨 English
- PHYS-H514 (option) **Reliability and safety** | Pierre-Etienne LABEAU (Coordinator)  
⌚ 3 credits [lecture: 22h, tutorial classes: 14h] 📅 first term 🗨 English

### Specific courses

- MECA-H524 (option) **Mechatronics 2** | Christophe COLLETTE (Coordinator)  
⌚ 3 credits [lecture: 12h, practical work: 24h] 📅 second term 🗨 English
- MECA-H533 (option) **Robotics II** | Tom Verstraeten (Coordinator)  
⌚ 4 credits [lecture: 24h, practical work: 24h] 📅 first term 🗨 English
- MECA-Y5061 (option) **Manufacturing Technology I**  
⌚ 3 credits [lecture: 12h, tutorial classes: 24h] 📅 first term 🗨 English
- MECA-Y5062 (option) **Manufacturing Technology 2** | Tim BROECKHOVEN (Coordinator)  
⌚ 3 credits [lecture: 18h, tutorial classes: 12h, personal assignments: 18h] 📅 second term 🗨 English

## Elective courses

*A total of 17 credits chosen from the following*

- ELEC-H412 (option/optional) **Design and control of electrical machines** | Johan GYSELINCK (Coordinator)  
⌚ 4 credits [lecture: 12h, tutorial classes: 18h, practical work: 18h] 📅 first term 🗨 English
- ELEC-H424 (option/optional) **Active medical devices** | Antoine NONCLERCQ (Coordinator)  
⌚ 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h] 📅 second term 🗨 English



ELEC-H509 (option/optional)	<b>Optimization-based Control Design</b>   Emanuele GARONE (Coordinator) ⌚ 4 credits [lecture: 24h, tutorial classes: 24h] 📅 first term 🗨 English
GEST-Y501 (option/optional)	<b>Business Management and Entrepreneurship</b>   Marc GOLDCHSTEIN (Coordinator) ⌚ 3 credits [lecture: 33h] 📅 first term 🗨 English
GEST-Y503 (option/optional)	<b>EUTOPIA learning unit : Technological business development project</b>   Thomas Crispeels (Coordinator) ⌚ 3 credits [tutorial classes: 13h, personal assignments: 71h] 📅 academic year 🗨 English
MECA-H500 (option/optional)	<b>Microfabrication techniques</b>   Pierre LAMBERT (Coordinator) ⌚ 5 credits [lecture: 24h, practical work: 12h, personal assignments: 48h] 📅 academic year 🗨 English
MECA-H501 (option/optional)	<b>Soft microrobotics</b>   Pierre LAMBERT (Coordinator) ⌚ 5 credits [lecture: 24h, practical work: 24h, personal assignments: 24h] 📅 academic year 🗨 English
MECA-H525 (option/optional)	<b>Multibody mechanics</b>   Dirk LEFEBER (Coordinator) ⌚ 3 credits [lecture: 12h, practical work: 24h] 📅 first term 🗨 English
MECA-H534 (option/optional)	<b>Acoustics</b>   Jean-Louis MIGEOT (Coordinator) ⌚ 4 credits [lecture: 24h, tutorial classes: 24h] 📅 first term 🗨 English
MECA-H537 (option/optional)	📅 unknown term
MECA-Y502 (option/optional)	<b>Theory and Practice of Advanced Control</b>   Emanuele GARONE (Coordinator) and Michel KINNAERT ⌚ 4 credits [lecture: 24h, practical work: 24h] 📅 second term 🗨 English
MECA-Y503 (option/optional)	<b>Case studies with composite materials</b>   Maarten Venmans (Coordinator) and Roel CALLEBAUT ⌚ 3 credits [lecture: 24h, personal assignments: 12h] 📅 academic year 🗨 English
STAG-H501 (option/optional)	<b>Internship (60 days)</b>   Frédéric ROBERT (Coordinator) ⌚ 10 credits [personal assignments: 300h] 📅 first term 🗨 English
STAG-H502 (option/optional)	<b>Internship (40 days)</b>   Lincy Pyl (Coordinator) ⌚ 6 credits [personal assignments: 180h] 📅 first term 🗨 English

## Free elective courses

Students have also the opportunity to choose courses among the courses of the 'transversal modules' of the School.

English : LANG-H500

Engineering and society : PROJ-H421 - GEST-H509 - BIME-G5505 - PHYS-F517

Sustainability : GEST-S492 - ENVI-F405 - CHIM-H504 - ENVI-F452 - ENVI-F454 - ELEC-Y514

Finance, accounting, management, marketing, logistics and quality : GEST-S101 - GEST-S318 - GEST-S421 - GEST-Y501 - GEST-H501 - GEST-H502

Participation to a summer school : EDUC-H601

## Free elective courses

*Up to six credits chosen from the following*

BIME-G5505 (option/optional)	<b>Interfaculty and interdisciplinary program in Healthcare Innovation</b>   Hilde STEVENS (Coordinator) ⌚ 5 credits [lecture: 40h, tutorial classes: 20h] 📅 second term 🗨 English
CHIM-H504 (option/optional)	<b>Engineering aspects of circular economy</b>   Prakash VENKATESAN (Coordinator) ⌚ 5 credits [lecture: 24h, practical work: 36h] 📅 second term 🗨 English
DROI-C5174 (option/optional)	<b>Approche interdisciplinaire du droit de la propriété intellectuelle/Interdisciplinary Approach to In</b>   Julien CABAY (Coordinator) ⌚ 5 credits [lecture: 24h] 📅 first term 🗨 English/French
EDUC-H601 (option/optional)	<b>Summer School</b>   Johan GYSELINCK (Coordinator) ⌚ 5 credits [personal assignments: 5h] 📅 academic year 🗨 English

ELEC-Y514 (option/optional)	<b>Sustainability : an interdisciplinary Approach</b>   Cathy MACHARIS (Coordinator) and Waldo Galle ⌚ 6 credits [lecture: 36h, practical work: 24h, personal assignments: 100h] 📅 academic year 🗨 English
ENVI-F405 (option/optional)	<b>Climat: sciences et politiques</b>   Frank PATTYN (Coordinator) and Louise Knops ⌚ 5 credits [lecture: 40h] 📅 second term 🗨 French
ENVI-F452 (option/optional)	<b>Environmental impact analysis and management</b>   Wouter ACHTEN (Coordinator) ⌚ 5 credits [lecture: 24h, practical work: 12h, project: 24h] 📅 first term 🗨 English/French
ENVI-F454 (option/optional)	<b>Energie: Société et environnement</b>   Michel HUART (Coordinator) and Nadine MATTIELLI ⌚ 5 credits [lecture: 30h, practical work: 12h, project: 24h] 📅 first term 🗨 French
GEST-H501 (option/optional)	<b>Logistics Engineering and Management</b>   Alassane Ballé NDIAYE (Coordinator) ⌚ 5 credits [lecture: 12h, tutorial classes: 36h] 📅 first term 🗨 English
GEST-H502 (option/optional)	<b>Supply Chain Performance Analytics</b>   Alassane Ballé NDIAYE (Coordinator) ⌚ 5 credits [lecture: 12h, tutorial classes: 36h, personal assignments: 12h] 📅 second term 🗨 English
GEST-H509 (option/optional)	<b>Ethique de l'ingénieur</b> ⌚ 3 credits [lecture: 12h, tutorial classes: 12h, practical work: 12h] 📅 second term 🗨 French
GEST-S101 (option/optional)	<b>Comptabilité financière</b>   Laurent GHEERAERT (Coordinator) and Gilles GEVERS ⌚ 5 credits [lecture: 36h, tutorial classes: 8h] 📅 second term 🗨 French
GEST-S318 (option/optional)	<b>Introduction to theoretical finance</b>   Laurent GHEERAERT (Coordinator) ⌚ 5 credits [lecture: 24h, tutorial classes: 24h] 📅 second term 🗨 English
GEST-S421 (option/optional)	<b>Entrepreneurial ecosystems</b>   Judith BEHRENS (Coordinator) ⌚ 5 credits [lecture: 24h, tutorial classes: 24h] 📅 second term 🗨 English
GEST-S492 (option/optional)	<b>Energy policy, sustainability &amp; management</b>   Adel EL Gammal (Coordinator), Julien BLONDEAU and Michel HUART ⌚ 5 credits [lecture: 36h, seminars: 24h] 📅 first term 🗨 English
GEST-Y501 (option/optional)	<b>Business Management and Entrepreneurship</b>   Marc GOLDCHSTEIN (Coordinator) ⌚ 3 credits [lecture: 33h] 📅 first term 🗨 English
LANG-H500 (option/optional)	<b>English for professional purposes</b>   Alexander CORNFORD (Coordinator) ⌚ 5 credits [tutorial classes: 48h, personal assignments: 12h] 📅 first and second terms 🗨 English
PROJ-H421 (option/optional)	<b>Projet polydaire: expériences didactiques innovantes pour le secondaire</b>   Simon-Pierre GORZA (Coordinator) ⌚ 5 credits [project: 150h] 📅 academic year 🗨 French

## Module Sustainable Transport and Automotive Engineering | M-IREMR-S

### Bloc 1

#### Partially common courses - Block 1

CNST-H421 (option)	<b>Structural analysis and finite elements</b>   Peter BERKE (Coordinator) and Lincy Pyl ⌚ 5 credits [lecture: 36h, tutorial classes: 24h] 📅 first term 🗨 English
MECA-H411 (option)	<b>Mechanical Vibrations</b>   Arnaud DERAEMAER (Coordinator) and Wout Weijtjens ⌚ 5 credits [lecture: 36h, tutorial classes: 24h] 📅 first term 🗨 English
MECA-H420 (option)	<b>Piston Engines</b>   Axel Coussement (Coordinator) ⌚ 3 credits [lecture: 26h, practical work: 8h] 📅 first term 🗨 English

#### Specific courses - Block 1

ELEC-H527 (option)	<b>Railway technology</b>   Valérie Ann JACOBS (Coordinator), Omar HEGAZY and Philippe LATAIRE ⌚ 6 credits [lecture: 42h, practical work: 30h] 📅 first and second terms 🗨 English
-----------------------	--



- ELEC-Y405 (option) **Vehicle dynamics and kinematics** | Kristof HARRI (Coordinator)  
⌚ 4 credits [lecture: 24h, practical work: 24h] 📅 first term 🗨 English
- ELEC-Y502 (option) **Sustainable mobility and logistics** | Philippe Marc F Lebeau (Coordinator) and Cathy MACHARIS  
⌚ 3 credits [lecture: 24h, personal assignments: 62h] 📅 first term 🗨 English
- ELEC-Y510 (option) **Electric and Hybrid Vehicle Traction** | Joeri VAN MIERLO (Coordinator)  
⌚ 4 credits [lecture: 12h, tutorial classes: 36h] 📅 second term 🗨 English
- MECA-Y406 (option) **Vehicle aerodynamics** | Ghader Ghorbaniasl (Coordinator)  
⌚ 3 credits [tutorial classes: 40h] 📅 second term 🗨 English

## Common courses - Block 1

Options 'Energy' and 'Aeronautics' : MECA-H402 - Turbomachinery is a 5 ECTS course.

Options 'Sustainable Transport' and 'Robotics' : MECA-H402 - Turbomachinery is a 3 ECTS course.

- ELEC-H406 (option) **Electrical drives** | Johan GYSELINCK (Coordinator) and Omar HEGAZY  
⌚ 5 credits [lecture: 24h, practical work: 36h] 📅 second term 🗨 English
- MATH-H407 (option) **Control system design** | Emanuele GARONE (Coordinator)  
⌚ 5 credits [lecture: 24h, tutorial classes: 12h, practical work: 24h] 📅 first term 🗨 English
- MECA-H402 (option) **Turbomachinery** | Patrick HENDRICK (Coordinator)  
⌚ 3 credits [lecture: 24h, tutorial classes: 12h] 📅 second term 🗨 English
- MECA-H409 (option) **Design methodology** | Alain DELCHAMBRE (Coordinator)  
⌚ 5 credits [lecture: 24h, tutorial classes: 24h, personal assignments: 12h] 📅 first term 🗨 English
- MECA-H419 (option) **Data-Driven Engineering** | Alessandro PARENTE (Coordinator), Axel Coussement, Emanuele GARONE, Omar HEGAZY, Alassane Ballé NDIAYE and Mehrdad TERATANI  
⌚ 4 credits [lecture: 36h, tutorial classes: 12h] 📅 second term 🗨 English

## Bloc 2

### Specific courses - Block 2

- ELEC-Y501 (option) **Vehicle electronics** | Peter Van Den Bossche (Coordinator), Valérie Ann JACOBS, HICHEM SAHLI and Leo VAN BIESEN  
⌚ 6 credits [lecture: 36h, practical work: 36h] 📅 first term 🗨 English
- MECA-H532 (option) **Advanced internal combustion engines** | Axel Coussement (Coordinator)  
⌚ 3 credits [lecture: 12h, tutorial classes: 14h, practical work: 16h] 📅 second term 🗨 English

### Partially common courses - Block 2

- MECA-H406 (option) **Composite structures** | Patrick HENDRICK (Coordinator)  
⌚ 3 credits [lecture: 18h, tutorial classes: 18h] 📅 second term 🗨 English
- MECA-Y404 (option) **Fuel cells and batteries** | Annick HUBIN (Coordinator)  
⌚ 4 credits [lecture: 24h, practical work: 24h] 📅 first term 🗨 English

### Elective courses - Block 2

*A total of 20 credits chosen from the following*

- ELEC-Y504 (option/optional) **Supply chain management** | Cathy MACHARIS (Coordinator)  
⌚ 6 credits [lecture: 28h, practical work: 17h, personal assignments: 114h] 📅 second term 🗨 English
- ELEC-Y508 (option/optional) **Automotive standardization** | Peter Van Den Bossche (Coordinator)  
⌚ 3 credits [lecture: 12h, personal assignments: 40h] 📅 first term 🗨 English



ELEC-Y514 (option/optional)	<b>Sustainability : an interdisciplinary Approach</b>   Cathy MACHARIS (Coordinator) and Waldo Galle ⌚ 6 credits [lecture: 36h, practical work: 24h, personal assignments: 100h] 📅 academic year 🗨 English
ELEC-Y560 (option/optional)	<b>Operations Management</b> ⌚ 6 credits [lecture: 24h, tutorial classes: 27h] 📅 first term 🗨 French
GEST-Y500 (option/optional)	<b>Entrepreneurship</b>   Nikolay DENTCHEV (Coordinator) ⌚ 3 credits [lecture: 15h, tutorial classes: 9h, personal assignments: 62h] 📅 first term 🗨 English
GEST-Y502 (option/optional)	<b>Business Aspects of Technology: Factory of the Future</b>   Thomas Crispeels (Coordinator) ⌚ 3 credits [lecture: 27h, personal assignments: 59h] 📅 first term 🗨 English
GEST-Y503 (option/optional)	<b>EUTOPIA learning unit : Technological business development project</b>   Thomas Crispeels (Coordinator) ⌚ 3 credits [tutorial classes: 13h, personal assignments: 71h] 📅 academic year 🗨 English
INFO-Y512 (option/optional)	<b>Machine Learning</b>   Ann NOWE (Coordinator) ⌚ 6 credits [lecture: 26h, tutorial classes: 26h, personal assignments: 150h] 📅 first term 🗨 Dutch
MECA-H534 (option/optional)	<b>Acoustics</b>   Jean-Louis MIGEOT (Coordinator) ⌚ 4 credits [lecture: 24h, tutorial classes: 24h] 📅 first term 🗨 English
MECA-H537 (option/optional)	<b>Naval Robotics</b>   Emanuele GARONE (Coordinator) ⌚ 4 credits [lecture: 24h, tutorial classes: 24h] 📅 second term 🗨 English
MECA-Y500 (option/optional)	<b>Experimental fluid mechanics</b>   Jeroen VAN BEECK (Coordinator) and Tim De Troyer ⌚ 3 credits [lecture: 12h, practical work: 24h] 📅 second term 🗨 English
MECA-Y503 (option/optional)	<b>Case studies with composite materials</b>   Maarten Venmans (Coordinator) and Roel CALLEBAUT ⌚ 3 credits [lecture: 24h, personal assignments: 12h] 📅 academic year 🗨 English
STAG-H501 (option/optional)	<b>Internship (60 days)</b>   Frédéric ROBERT (Coordinator) ⌚ 10 credits [personal assignments: 300h] 📅 first term 🗨 English
STAG-H502 (option/optional)	<b>Internship (40 days)</b>   Lincy Pyl (Coordinator) ⌚ 6 credits [personal assignments: 180h] 📅 first term 🗨 English

## Free elective courses

Students have also the opportunity to choose courses among the courses of the 'transversal modules' of the School.

English : LANG-H500

Engineering and society : PROJ-H421 - GEST-H509 - BIME-G5505 - PHYS-F517

Sustainability : GEST-S492 - ENVI-F405 - CHIM-H504 - ENVI-F452 - ENVI-F454 - ELEC-Y514





























Finance, accounting, management, marketing, logistics and quality : GEST-S101 - GEST-S318 - GEST-S421 - GEST-Y501 - GEST-H501 - GEST-H502

Participation to a summer school : EDUC-H601

## Free elective courses

*Up to six credits chosen from the following*

BIME-G5505 (option/optional)	<b>Interfaculty and interdisciplinary program in Healthcare Innovation</b>   Hilde STEVENS (Coordinator) ⌚ 5 credits [lecture: 40h, tutorial classes: 20h] 📅 second term 🗨 English
CHIM-H504 (option/optional)	<b>Engineering aspects of circular economy</b>   Prakash VENKATESAN (Coordinator) ⌚ 5 credits [lecture: 24h, practical work: 36h] 📅 second term 🗨 English
DROI-C5174 (option/optional)	<b>Approche interdisciplinaire du droit de la propriété intellectuelle/Interdisciplinary Approach to In</b>   Julien CABAY (Coordinator) ⌚ 5 credits [lecture: 24h] 📅 first term 🗨 English/French
EDUC-H601 (option/optional)	<b>Summer School</b>   Johan GYSELINCK (Coordinator) ⌚ 5 credits [personal assignments: 5h] 📅 academic year 🗨 English

<p>ELEC-Y514 (option/optional)</p>	<p><b>Sustainability : an interdisciplinary Approach</b>   Cathy MACHARIS (Coordinator) and Waldo Galle          6 credits [lecture: 36h, practical work: 24h, personal assignments: 100h]  academic year  English</p>
<p>ENVI-F405 (option/optional)</p>	<p><b>Climat: sciences et politiques</b>   Frank PATTYN (Coordinator) and Louise Knops          5 credits [lecture: 40h]  second term  French</p>
<p>ENVI-F452 (option/optional)</p>	<p><b>Environmental impact analysis and management</b>   Wouter ACHTEN (Coordinator)          5 credits [lecture: 24h, practical work: 12h, project: 24h]  first term  English/French</p>
<p>ENVI-F454 (option/optional)</p>	<p><b>Energie: Société et environnement</b>   Michel HUART (Coordinator) and Nadine MATTIELLI          5 credits [lecture: 30h, practical work: 12h, project: 24h]  first term  French</p>
<p>GEST-H501 (option/optional)</p>	<p><b>Logistics Engineering and Management</b>   Alassane Ballé NDIAYE (Coordinator)          5 credits [lecture: 12h, tutorial classes: 36h]  first term  English</p>
<p>GEST-H502 (option/optional)</p>	<p><b>Supply Chain Performance Analytics</b>   Alassane Ballé NDIAYE (Coordinator)          5 credits [lecture: 12h, tutorial classes: 36h, personal assignments: 12h]  second term  English</p>
<p>GEST-H509 (option/optional)</p>	<p><b>Ethique de l'ingénieur</b>          3 credits [lecture: 12h, tutorial classes: 12h, practical work: 12h]  second term  French</p>
<p>GEST-S101 (option/optional)</p>	<p><b>Comptabilité financière</b>   Laurent GHEERAERT (Coordinator) and Gilles GEVERS          5 credits [lecture: 36h, tutorial classes: 8h]  second term  French</p>
<p>GEST-S318 (option/optional)</p>	<p><b>Introduction to theoretical finance</b>   Laurent GHEERAERT (Coordinator)          5 credits [lecture: 24h, tutorial classes: 24h]  second term  English</p>
<p>GEST-S421 (option/optional)</p>	<p><b>Entrepreneurial ecosystems</b>   Judith BEHRENS (Coordinator)          5 credits [lecture: 24h, tutorial classes: 24h]  second term  English</p>
<p>GEST-S492 (option/optional)</p>	<p><b>Energy policy, sustainability &amp; management</b>   Adel EL Gammal (Coordinator), Julien BLONDEAU and Michel HUART          5 credits [lecture: 36h, seminars: 24h]  first term  English</p>
<p>GEST-Y501 (option/optional)</p>	<p><b>Business Management and Entrepreneurship</b>   Marc GOLDCHSTEIN (Coordinator)          3 credits [lecture: 33h]  first term  English</p>
<p>LANG-H500 (option/optional)</p>	<p><b>English for professional purposes</b>   Alexander CORNFORD (Coordinator)          5 credits [tutorial classes: 48h, personal assignments: 12h]  first and second terms  English</p>
<p>PROJ-H421 (option/optional)</p>	<p><b>Projet polydaire: expériences didactiques innovantes pour le secondaire</b>   Simon-Pierre GORZA (Coordinator)          5 credits [project: 150h]  academic year  French</p>

