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Introduction

Admission

For the specific conditions of this program : refer to the French version

Information

Learning outcomes

The primary objective of the "polytechnic" minors organized by the Faculté des Sciences Appliquées is to allow students taking a baccalaureate in engineering science, if they so wish, to acquire, through a polytechnic major/minor, basic training in two specialist areas of engineering science, and thus to broaden their technical range of skills, or prepare for a master's in engineering science in a domain which spans the various basic courses offered at baccalaureate level. The disciplinary objectives of the minor in applied mathematics are to allow the student to acquire training in the basic concepts of the discipline, and, more specifically, to: Acquire basic skills in and knowledge of the fundamental disciplines in applied mathematics (optimization and operational research, algorithm and discrete mathematics, differential equations and dynamic systems, numerical analysis, statistics and probability) Gain an introduction into how mathematical models for engineering are designed, analyzed implemented in industry and organizations as well as drawing up effective strategies to improve the way such models work

Possible trainings at the end of the programme

Majors-minors leading directly to a master's course(s) : For students who have performed well and obtained a bachelor's qualification in engineering science - civil engineering, the polytechnic minors guarantee them, as part of a program which includes one of these minors, unconditional access, without additional training, to the civil engineering master's which corresponds to this minor. For the minor in applied chemistry and physics: the civil engineering master's in chemistry and material science and the civil engineering master's physicist For the minor in construction : the civil engineering master's in construction For the minor in electricity: the civil engineering master's electrician For the minor in IT: the civil engineering master's in IT For the minor in mechanics: the civil engineering master's mechanic For the minor in applied mathematics: the civil engineering master's in applied mathematics For a program which combines the major in electricity/minor in mechanics, or major in mechanics/minor in electricity: the civil engineering master's electromechanic.

Contacts

Curriculum Managment

Entite de la structure MAP

| | |
|-------------------------|-----------------------------------------------------------------------------------------------------------|
| Acronyme | MAP |
| Dénomination | Commission de programme - Ingénieur civil en mathématiques appliquées |
| Adresse | Avenue Georges Lemaître, 4-6 bte L4.05.01 1348 Louvain-la-Neuve Tél 010 47 25 97 - Fax 010 47 21 80 |
| Secteur | Secteur des sciences et technologies (SST) |
| Faculté | Ecole Polytechnique de Louvain (EPL) |
| Commission de programme | Commission de programme - Ingénieur civil en mathématiques appliquées (MAP) |

Academic Supervisor : [Pierre-Antoine ABSIL](#)

Jury

Président du Jury : **Piotr SOBIESKI**

Usefull Contacts

Secrétariat : **Nathalie PONET**

Detailed programme

PROGRAMME BY SUBJECT

○ Mandatory

△ Courses not taught during 2013-2014

⊕ Periodic courses taught during 2013-2014

⊗ Optional

⊖ Periodic courses not taught during 2013-2014

‡ Two years course

Click on the course title to see detailed informations (objectives, methods, evaluation...)

Year

2 3

○ Cours obligatoires de la mineure en mathématiques appliquées. (20 credits)

| | | | | | | | |
|-------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------|-----------|----|---|---|
| ○ LMAT1223 | Differential equations | Jean Van Schaftingen | 30h+15h | 5 Credits | 2q | x | |
| ○ LINMA1170 | Numerical analysis | Pierre-Antoine Absil, Paul Van Dooren (coord.) | 30h +22.5h | 5 Credits | 1q | | x |
| ○ LINMA1691 | Discrete mathematics - Graph theory and algorithms | Vincent Blondel, Jean-Charles Delvenne (compensates Vincent Blondel) | 30h +22.5h | 5 Credits | 1q | | x |
| ○ LINMA1702 | Applied mathematics : Optimization I | Vincent Blondel, François Glineur (compensates Vincent Blondel), François Glineur (coord.) | 30h +22.5h | 5 Credits | 2q | x | |

○ Premier cours au choix de la mineure en mathématiques appliquées (5 credits)

Les étudiants choisissent un des deux cours de cette liste. Si les étudiants ont une majeure comportant déjà l'un de ces cours, ils peuvent soit choisir l'autre cours, soit choisir 5 crédits parmi la liste des seconds cours au choix de la mineure en mathématiques appliquées.

| | | | | | | | |
|-------------|--------------------------------------------------|------------------------------------------------------|---------|-----------|----|--|---|
| ⊗ LINMA1510 | Linear Control | Denis Dochain | 30h+30h | 5 Credits | 2q | | x |
| ⊗ LINMA1731 | Stochastic processes : Estimation and prediction | Pierre-Antoine Absil, Luc Vandendorpe (coord.) | 30h+30h | 5 Credits | 2q | | x |

○ Second cours au choix de la mineure en mathématiques appliquées (5 credits)

Les étudiants choisissent un minimum de 5 crédits de cette liste. Les cours choisis ne peuvent pas faire partie de la majeure suivie par l'étudiant. Il peut également proposer d'autres cours à l'approbation de la commission de programme en mathématiques appliquées.

Les étudiants qui n'ont pas pris le cours LFSAB 1507 Projet 4 en mathématiques appliquées, dans le cadre du tronc commun, peuvent le prendre dans le cadre de la mineure

| | | | | | | | |
|-------------|-----------------------------------------------------------------------------------------|------------------------------------------------------|---------------|-----------|----|--|---|
| ⊗ LELEC1350 | APPLIED ELECTROMAGNETISM | Christophe Craeye, Danielle Janvier | 30h+30h | 5 Credits | 1q | | x |
| ⊗ LELEC1360 | TELECOMMUNICATIONS | Luc Vandendorpe | 30h+30h | 5 Credits | 2q | | x |
| ⊗ LFSAB1225 | Introduction to biomedical engineering | Philippe Lefèvre | 45h | 5 Credits | 2q | | x |
| ⊗ LIEPR1024 | Fundamentals of neurophysiology and neuropsychology in motor control and motor learning | Julie Duque, Marcus Missal (coord.) | 45h | 5 Credits | 1q | | x |
| ⊗ LINGI1101 | Discrete mathematics: logical foundations of computing science | Peter Van Roy | 30h+30h | 5 Credits | 1q | | x |
| ⊗ LINGI1123 | Computability and complexity | Yves Deville | 30h+30h | 5 Credits | 2q | | x |
| ⊗ LINMA1315 | Mathematical analysis : complements | Michel Willem | 30h +22.5h | 5 Credits | 2q | | x |
| ⊗ LINMA1510 | Linear Control | Denis Dochain | 30h+30h | 5 Credits | 2q | | x |
| ⊗ LINMA1731 | Stochastic processes : Estimation and prediction | Pierre-Antoine Absil, Luc Vandendorpe (coord.) | 30h+30h | 5 Credits | 2q | | x |
| ⊗ LMAT1222 | Complex analysis | Luc Haine | 30h+15h | 5 Credits | 2q | | x |
| ⊗ LMAT1371 | Probability | Jan Johannes, Johan Segers | 30h +22.5h | 5 Credits | 2q | | x |
| ⊗ LMECA1100 | Deformable solid mechanics. | Issam Doghri | 30h+30h | 5 Credits | 2q | | x |

| | | | | | | | Year | |
|-------------|-----------------------------------------|-------------------------------------------|---------|-----------|----|--|------|---|
| | | | | | | | 2 | 3 |
| ⊗ LMECA1321 | Fluid mechanics and transfer phenomena. | Vincent Legat, Grégoire Winckelmans | 30h+30h | 5 Credits | 2q | | x | |
| ⊗ LMECA1901 | Continuum mechanics. | Philippe Chatelain, Emilie Marchandise | 30h+30h | 5 Credits | 1q | | x | |
| ⊗ LSINF1121 | Algorithmics and data structures | Pierre Dupont | 30h+30h | 5 Credits | 1q | | x | |

Infos

