Université de Liège

Study programmes 2007-2008
Faculty of Applied Sciences
civil engineering in physics

First Year

Compulsory courses

DROI0724-2	*law and engineering* - Pascale LECOCQ	15	-	-	**2**
ELEC0053-1	*Electric circuits* - Patricia ROUSSEAUX	20	10	-	**2,5**
ELEC0052-1	*Analysis and Design of Electrical Measuring Systems* - Philippe VANDERBEMDEN	30	30	-	**5,5**
ELEN0001-1	*Analogical Electronics circuits* - Benoît VANDERHEYDEN	30	30	-	**5,5**
ELEN0040-1	*Digital Electronics* - Jacques DESTINÉ	30	30	-	**5,5**
MATH0012-1	*Numerical Analysis II* - François-Xavier LITT	20	40	-	**5**
MECA0012-3	*Mechanics of materials* (english) - Serge CESCOTTO	45	30	-	**6**
MECA0022-1	*Continuum Thermomechanics* - Michel HOGGE	30	30	-	**5,5**
MECA0025-1	*Fluid Mechanics* - Jean-André ESSERS	30	30	-	**5,5**
PHYS0055-1	*Introduction to Condensed Matter Physics* - Jean-Pierre GASPARD	30	30	-	**5,5**
PHYS0211-1	*Quantum Mechanics* - Joseph CUGNON	45	30	-	**6**
SYST0002-1	*Linear systems* - Rodolphe SEPULCHRE	30	30	-	**5,5**

Second Year

Notice : Students must opt for one of the three fields offered and within this field choose (over the 2 years) a combination of activities (courses, training course) representing a minimum of 60 ECTS.

Courses common to the three fields.

GEST0106-1	*Elements of Corporate Management* - Pierre-Armand MICHEL	30	-	-	**3**
ELEN0068-1	*Electromagnetic propagation* - Benoît VANDERHEYDEN	30	30	-	**6**
MATH0024-1	*Further Study of Digital Analysis (Equations with Partial Derivatives)* - Jean-André ESSERS	30	30	-	**6**
MECA0023-2	*Further Study of Solid Mechanics (Non-Linear Behaviour of Solids)* - Jean-Philippe PONTHOT	30	30	-	**6**
MECA0036-1	*Finite Element Method* - Jean-Philippe PONTHOT	30	30	-	**6**

Choose one of the following courses :

PHYS0069-1	*Introduction to statistical physics* - Stéphane DORBOLO	30	30	-	**6**
PHYS0043-1	*Theoretical and Mathematical Physics (partim : Statistical Mechanics)* - Marcel AUSLOOS	30	30	-	**6**

Optional courses

Students must choose one of the three following fields :

A. Field Continuous Environments

Choose courses totalling 27 ECTS from the following :

AERO0001-1	*Aerodynamics, 30h Th, 30h Exc* - Jean-André ESSERS	30	30	-	**6**
INFO0026-3	*Computer Graphics* - Pierre BECKERS	30	30	-	**6**
MECA0027-1	*Structure Optimization* - Claude FLEURY	30	30	-	**6**
MECA0029-1	*Mechanical Vibrations* - Gaëtan KERSCHEN	30	30	-	**6**
MECA0033-1	*Heat and Material Transfer Modelling* - Michel HOGGE	30	30	-	**6**
MECA0053-1	*Geophysical fluid dynamics (part 1)* - Jean-Marie BECKERS	15	15	-	**3**
MECA0126-1	*Further Study of Transitional Fluid Mechanics* - André LEJEUNE, Michel PIROTTON	15	15	-	**3**
PHYS0040-1	*Irreversible Thermodynamics* - Pierre DAUBY	30	-	-	**3**

B. Field Spatial Techniques

Choose courses totalling 27 ECTS from the following :

AERO0012-1	*Exterior Balistics and dynamics of space rockets* - Pierre BECKERS	15	15	-	**3**
ASTR0004-2	*Astrophysics and Space Techniques* - Jean SURDEJ - [15h Pr., 5d Peda. Tr.]	30	-	[+]	**6**

ASTR0006-1	*Space Astrophysics Research Programs* - Jean-Pierre SWINGS	20	10	-	**3**
SPAT0048-2	*Physics of the earth's atmosphere and environment* - Jean-Claude GÉRARD	30	30	-	**6**
ELEN0008-1	*Principles of analog and digital telecommunications systems* - Marc VAN DROOGENBROECK	30	30	-	**6**
[...]	One or more courses from the other two fields				

C. Field Condensed Matter and Optoelectronical Physics

ELEN0004-1	*The physics of semiconductor devices* - Benoît VANDERHEYDEN	30	30	-	**5,5**
ELEN0047-1	*Superconductivity* - Philippe VANDERBEMDEN	30	30	-	**5**
PHYS0047-1	*Additional issues in the physics of condensed states* - Marcel SCHMEITS	30	30	-	**5,5**
PHYS0048-1	*Coherent and Incoherent Optics* - Serge HABRAKEN	30	30	-	**5,5**
PHYS0054-1	*Microscopic Structures (atoms, molecules, nuclei)* - Joseph CUGNON	30	30	-	**5,5**

Third Year

Obligations common to the 3 Study Paths

[...]	One General Education course, chosen from the University programme, and approved by the President of the Board of Studies.				
ATFE0001-1	*Travail de fin d'études*	-	-	-	**24**

To choose :

ASTG0010-1	*Stage*	-	-	-	**12**
[...]	One or more courses totalling 12 ECTS from "ingénieur civil physicien"				

Pursuing the field begun in year 2

A. Field Continuous Environments

Students must choose from the following list or the option course list a combination of courses totalling 21 ECTS.

ESHY0070-1	*Dynamics of lower atmospherical layers and air-sea interactions* - Louis FRANÇOIS	30	15	-	**4**
MECA0031-2	*Kinematics and Dynamics of Mechanisms* - Olivier BRULS	30	30	-	**6**
MECA0053-2	*Geophysical fluid dynamics (part 2)* - Jean-Marie BECKERS	15	15	-	**3**
MECA0055-1	*Numerical methods applied to the environment* - Jean-Marie BECKERS	30	30	-	**6**
MECA0058-1	(pas organisé en 2007-2008) *Fracture Mechanics* - Laurent STAINIER	30	30	-	**6**
MECA0097-1	*Digital Methods in Fluid Dynamics* - Jean-André ESSERS	15	15	-	**3**
MECA0137-1	*Non-Newtonian Fluid Mechanics* - N... - Suppl : Benoît DEBBAUT, Jean-Marie MARCHAL	30	30	-	**6**
PHYS0032-1	*Sheared Flows in Turbulent States* - Jean-André ESSERS	20	10	-	**3**
[...]	Courses from "Liste des cours à option"				

B. Field Spatial Techniques

Students must choose from the following list or the option course list a combination of courses totalling 21 ECTS.

AERO0018-1	*Space Experiment Development* - Pierre ROCHUS	15	15	-	**3**
ASTR0003-1	*Astromechanics Basics and Artificial Satellite Orbits* - Pierre ROCHUS	20	10	-	**3**
ASTR0007-2	*Spacial systems for observing the earth* - Christian BARBIER	20	-	-	**2**
ELEN0017-1	*Analysis and Design of Telecommunications Systems* - Marc VAN DROOGENBROECK	30	30	-	**6**
[...]	Courses from "Liste des cours à option"				

C. Field Condensed Matter Physics -optoelectronics

Les étudiants doivent en outre choisir dans la liste suivante et dans la liste des cours à option un ensemble de cours pour un total de 21 ECTS.

PHYS0058-1	*Interactions between radiation and matter* - Joseph CUGNON	30	30	-	**6**
PHYS0046-2	*Advanced Quantum Physics* - Jean-Pierre GASPARD	30	30	-	**6**
PHYS0227-2	*complements in statistical physics* - Marcel AUSLOOS	30	30	-	**6**
ELEN0069-1	*Nanoelectronics / Optoelectronics* - Benoît VANDERHEYDEN	30	30	-	**6,5**

PHYS0236-2	*Lasers in physics and applications* - Serge HABRAKEN	30	30	-	**6**
[...]	Courses from "Liste des cours à option"				

Optional courses

Option course list

MATH0049-1	*Morphological Characterization of Unordered Systems* - Silvia BLACHER	30	30	-	**6**
MECA0062-1	*Vibration Testing and Experimental Modal Analysis* - Jean-Claude GOLINVAL	30	30	-	**6**
MECA0090-1	*Composite Structure Design* - Claude FLEURY	20	10	-	**3**
MECA0091-1	*Material Secondary Forming Process Modelling* - Michel HOGGE	15	15	-	**3**
MECA0117-1	*Finite Element Method II* - Michel HOGGE	15	15	-	**3**
PHYS0221-2	*Advanced Theoretical Physics, Relativity and Cosmology* - Yves DE ROP	15	-	-	**2**
PHYS0222-1	*Theoretical Physics, part II: Group Theory* (english) - Floarea STANCU	30	-	-	**3**
PHYS0234-2	*Introduction to fractals and chaos* - Marcel AUSLOOS	15	15	-	**3**
PHYS0231-2	*An Approcah to Chaotic Phenomena* - Pierre DAUBY	20	10	-	**3**
SYST0017-1	*Non linear systems* - Rodolphe SEPULCHRE	30	30	-	**6**
GEST1069-1	*Introduction to entrepreneurship* - Bernard SURLEMONT	30	-	-	-
ECON0878-1	*Microeconomy applied to the engineering science* - Jean-Pierre HANSEN	30	-	-	-
ECON0099-1	*Industrial strategy: economic case analysis* - Jean-Pierre HANSEN	30	-	-	-
[...]	Students can, with the approval of the President of the Board of Studies, choose 6 ECTS from the University of Liège programme.				