

## First Year

### Compulsory courses

DROI0724-2	<i>law and engineering</i> - Pascale LECOCQ	15	-	-	2
ELEC0053-1	<i>Electric circuits</i> - Patricia ROUSSEAU	20	10	-	3
ELEC0052-1	<i>Analysis and Design of Electrical Measuring Systems</i> - Philippe VANDERBEMDEN	30	30	-	5,5
ELEN0001-1	<i>Analogical Electronics circuits</i> - Benoît VANDERHEYDEN	30	30	-	5,5
ELEN0008-1	<i>Principles of analog and digital telecommunications systems</i> - Marc VAN DROOGENBROECK	30	30	-	5,5
ELEN0040-1	<i>Digital Electronics</i> - Jacques DESTINÉ	30	30	-	5,5
ELEN0068-1	<i>Electromagnetic propagation</i> - Benoît VANDERHEYDEN	30	30	-	5,5
ELEN0070-1	<i>Signal Processing</i> - Jacques VERLY	30	30	-	5,5
INFO0012-1	<i>Computation Structures</i> - Pierre WOLPER	30	30	-	5,5
INFO0054-1	<i>Functional programming</i> - Pascal GRIBOMONT	30	30	-	5,5
MATH0012-1	<i>Numerical Analysis II</i> - François-Xavier LITT	20	40	-	5,5
SYST0002-1	<i>Linear systems</i> - Rodolphe SEPULCHRE	30	30	-	5,5

électronique

## Second Year

### Compulsory courses

GEST0106-1	<i>Elements of Corporate Management</i> - Pierre-Armand MICHEL	30	-	-	3
ELEN0074-1	<i>Sensors, microsensors and instrumentation</i> - Philippe VANDERBEMDEN	30	30	-	5,5
ELEN0002-1	<i>Introduction to Audio and Video Techniques</i> - Jean-Jacques EMBRECHTS	30	30	-	5,5
ELEN0004-1	<i>The physics of semiconductor devices</i> - Benoît VANDERHEYDEN	30	30	-	5,5
ELEN0017-1	<i>Analysis and Design of Telecommunications Systems</i> - Marc VAN DROOGENBROECK	30	30	-	5,5
ELEN0037-1	<i>Microélectronique. Analyse et CAO des circuits intégrés</i> - Jacques DESTINÉ	30	30	-	5,5
ELEN0060-1	<i>Information and Coding Theory</i> - Louis WEHENKEL	30	30	-	5,5
INFO0064-1	<i>Embedded Systems</i> - Bernard BOIGELOT	30	30	-	5,5
SYST0003-1	<i>Linear control systems</i> - Rodolphe SEPULCHRE	30	30	-	5,5

### Optional courses

Students must also choose two option courses from the list which follows :

ELEC0029-1	<i>Electric Power Systems I</i> - Thierry VAN CUTSEM	30	30	-	6,5
ELEC0054-1	<i>Application of Electrical Measuring Systems</i> - Philippe VANDERBEMDEN	30	30	-	6,5
ELEN0016-1	<i>Digital Image Processing</i> - Marc VAN DROOGENBROECK	30	30	-	6,5
ELEN0018-1	<i>Electroacoustics</i> - Jean-Jacques EMBRECHTS	30	30	-	6,5
ELEN0019-1	<i>Treatment of the audio signals: principles and experiments</i> - Jean-Jacques EMBRECHTS	30	30	-	6,5
ELEN0071-1	<i>Digital Signal Processing</i> - Jacques VERLY	30	30	-	6,5
ELEN0072-1	<i>Statistical Signal Processing</i> - Jacques VERLY	30	30	-	6,5
INFO0013-1	<i>Computer vision</i> - Justus PIATER	30	30	-	6,5
INFO0016-1	<i>Introduction to the Theory of Computation</i> - Pierre WOLPER	30	30	-	6,5
INFO0004-1	<i>Programming Language Internals</i> - Justus PIATER	30	30	-	6,5
INFO0060-1	<i>Concurrent System Verification and Temporal Logic</i> - Bernard BOIGELOT, Pascal GRIBOMONT, Pierre WOLPER	30	30	-	6,5
INFO0065-1	<i>Seminar on Intrusion Systems</i> - Marc DACIER	10	50	-	6,5
[...]	The courses of the programme called "Civil Engineering Electrician - electrical energy systems Study Path" or the programme called "Civil Engineering computer expert"				

## Third Year

### Compulsory courses

ELEC0055-1	<i>Electronic systems of control mechanism</i> - Christophe GEUZAIN - Suppl : Paul BLEUS	30	30	-	5,5
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ATFE0001-1 *Travail de fin d'études* - - - **20**

### Optional courses

Choose one of the following courses :

[...] One General education course to be chosen from the University programme and approved by the President of the Board of Studies.

GEST1069-1	<i>Introduction to entrepreneurship</i> - Bernard SURLEMONT	30	-	-	-
ECON0878-1	<i>Microeconomy applied to the engineering science</i> - Jean-Pierre HANSEN	30	-	-	-
ECON0099-1	<i>Industrial strategy: economic case analysis</i> - Jean-Pierre HANSEN	30	-	-	-

Students must moreover choose a total of 26 ECTS (4 X 6.5 ECTS) from the list below :

ELEC0431-1	<i>Electromagnetic energy transformation</i> - Christophe GEUZAINÉ	30	30	-	<b>6,5</b>
ELEC0014-1	<i>Electric Energy Transmission and Distribution</i> - Jean-Louis LILIE	30	30	-	<b>6,5</b>
ELEC0017-1	<i>Indirect Effects of Electromagnetic Fields</i> - Véronique BEAUVOIS, Jean-Louis LILIE	30	30	-	<b>6,5</b>
ELEC0029-1	<i>Electric Power Systems I</i> - Thierry VAN CUTSEM	30	30	-	<b>6,5</b>
ELEC0047-1	<i>Electric Power Systems (Dynamic Aspects)</i> - Thierry VAN CUTSEM	30	30	-	<b>6,5</b>
ELEC0054-1	<i>Application of Electrical Measuring Systems</i> - Philippe VANDERBEMDEN	30	30	-	<b>6,5</b>
ELEN0009-1	<i>Building Acoustics and Noise Control</i> - Jean-Jacques EMBRECHTS	30	30	-	<b>6,5</b>
ELEN0016-1	<i>Digital Image Processing</i> - Marc VAN DROOGENBROECK	30	30	-	<b>6,5</b>
ELEN0018-1	<i>Electroacoustics</i> - Jean-Jacques EMBRECHTS	30	30	-	<b>6,5</b>
ELEN0019-1	<i>Treatment of the audio signals: principles and experiments</i> - Jean-Jacques EMBRECHTS	30	30	-	<b>6,5</b>
ELEN0035-1	<i>CAD in (Analogue and Digital) On-Demand Microelectronics</i> - Jacques DESTINÉ	30	30	-	<b>6,5</b>
ELEN0038-1	<i>Microsystems</i> - Jacques DESTINÉ	30	30	-	<b>6,5</b>
ELEN0062-1	<i>Applied Inductive Learning</i> - Louis WEHENKEL	30	30	-	<b>6,5</b>
GBIO0008-1	<i>Imagerie médicale</i> - Christophe PHILLIPS	30	30	-	<b>6,5</b>
ELEN0069-1	<i>Nanoelectronics / Optoelectronics</i> - Benoît VANDERHEYDEN	30	30	-	<b>6,5</b>
ELEN0071-1	<i>Digital Signal Processing</i> - Jacques VERLY	30	30	-	<b>6,5</b>
ELEN0072-1	<i>Statistical Signal Processing</i> - Jacques VERLY	30	30	-	<b>6,5</b>
INFO0009-1	<i>Introduction to Data Bases</i> - Pierre WOLPER	30	30	-	<b>6,5</b>
INFO0010-1	<i>Introduction to Computer Networks</i> - Guy LEDUC	30	30	-	<b>6,5</b>
INFO0013-1	<i>Computer vision</i> - Justus PIATER	30	30	-	<b>6,5</b>
INFO0025-1	<i>Compilers and Compiler Writers</i> - Pierre-Arno DE MARNEFFE	30	30	-	<b>6,5</b>
INFO0045-1	<i>Cryptography and Computer Security</i> - Tri-An BANH	30	-	-	<b>3</b>
INFO0060-1	<i>Concurrent System Verification and Temporal Logic</i> - Bernard BOIGELOT, Pascal GRIBOMONT, Pierre WOLPER	30	30	-	<b>6,5</b>
INFO0064-1	<i>Embedded Systems</i> - Bernard BOIGELOT	30	30	-	<b>6,5</b>
INFO0065-1	<i>Seminar on Intrusion Systems</i> - Marc DACIER	10	50	-	<b>6,5</b>
MATH0461-1	<i>Introduction à l'optimisation numérique</i> - Quentin LOUVEAUX	30	30	-	<b>6,5</b>
MATH0462-1	(pas organisé en 2007-2008) <i>Programmation dynamique et commande optimale</i> - Quentin LOUVEAUX	30	30	-	<b>6,5</b>
SYST0017-1	<i>Non linear systems</i> - Rodolphe SEPULCHRE	30	30	-	<b>6,5</b>

[...] Students must also choose one or more university courses totalling 5.5 ECTS.

systèmes d'énergie électrique

## Second Year

### Compulsory courses

#### Renewed / Updated :

#### Theme Mechanics

	<u>Prerequisite</u>	1re épreuve ingénieur civil électricien			
MECA0002-1	<i>Applied Thermodynamics and Introduction to Heat Engines</i> - Jean LEBRUN	30	30	-	<b>5,5</b>
MECA0030-1	<i>Dynamics of Mechanical Systems</i> - Jean-Claude GOLINVAL	30	30	-	<b>5,5</b>

#### Theme Electricity and Computing

	<u>Prerequisite</u>	1re épreuve ingénieur civil électro-mécanicien				
ELEN0075-1	<i>Analog Electronics</i> - Benoît VANDERHEYDEN		30	30	-	5,5
INFO0012-1	<i>Computation Structures</i> - Pierre WOLPER		30	30	-	5,5
<b>Common core courses</b>						
<b>Theme Systems</b>						
SYST0003-1	<i>Linear control systems</i> - Rodolphe SEPULCHRE		30	30	-	5,5
<b>Theme Electrical Communications</b>						
ELEC0014-1	<i>Electric Energy Transmission and Distribution</i> - Jean-Louis LILIE		30	30	-	5,5
ELEC0029-1	<i>Electric Power Systems I</i> - Thierry VAN CUTSEM		30	30	-	5,5
<b>Theme: Conversion and Production of Electrical Energy</b>						
ELEC0431-1	<i>Electromagnetic energy transformation</i> - Christophe GEUZAIN		30	30	-	5,5
MECA0037-1	<i>Centrales thermiques et cogénération</i> - Philippe MATHIEU		30	30	-	5,5
<b>Theme: Economics and Management</b>						
GEST0106-1	<i>Elements of Corporate Management</i> - Pierre-Armand MICHEL		30	-	-	3
LOGI0001-1	<i>Supply Chain Management (english)</i> - Yasemin ARDA		45	-	-	4
ECON0311-1	<i>Introduction to Microeconomic Analysis</i> - Bernard LEJEUNE		30	15	-	3,5
<b>Optional courses</b>						
Choose courses totalling 11 ECTS from the following list :						
<b>Telecommunications</b>						
INFO0010-1	<i>Introduction to Computer Networks</i> - Guy LEDUC		30	30	-	5,5
ELEN0008-1	<i>Principles of analog and digital telecommunications systems</i> - Marc VAN DROOGENBROECK		30	30	-	5,5
ELEN0060-1	<i>Information and Coding Theory</i> - Louis WEHENKEL		30	30	-	5,5
<b>Computing Systems</b>						
INFO0009-1	<i>Introduction to Data Bases</i> - Pierre WOLPER		30	30	-	5,5
INFO0064-1	<i>Embedded Systems</i> - Bernard BOIGELOT		30	30	-	5,5
<b>Electronics and Microsystems</b>						
ELEC0041-1	<i>Modeling and design of electromagnetic systems</i> - Patrick DULAR, Christophe GEUZAIN		30	30	-	5,5
ELEN0037-1	<i>Microélectronique. Analyse et CAO des circuits intégrés</i> - Jacques DESTINÉ		30	30	-	5,5
ELEN0038-1	<i>Microsystems</i> - Jacques DESTINÉ		30	30	-	5,5
<b>Signal Processing</b>						
ELEN0002-1	<i>Introduction to Audio and Video Techniques</i> - Jean-Jacques EMBRECHTS		30	30	-	5,5
ELEN0071-1	<i>Digital Signal Processing</i> - Jacques VERLY		30	30	-	5,5

## Third Year

### Common core courses

ELEC0018-1	<i>Electricity Markets, Distribution and Renewable Energy</i> - Yvan HELLA		45	15	-	5,5
ATFE0001-1	<i>Travail de fin d'études</i>		-	-	-	20

### Optional courses

Choose one of the following courses :

[...] One General education course to be chosen from the University programme and approved by the President of the Board of Studies.

GEST1069-1	<i>Introduction to entrepreneurship</i> - Bernard SURLÉMONT		30	-	-	-
ECON0878-1	<i>Microeconomy applied to the engineering science</i> - Jean-Pierre HANSEN		30	-	-	-
ECON0099-1	<i>Industrial strategy: economic case analysis</i> - Jean-Pierre HANSEN		30	-	-	-

Choose courses totalling 31.5 ECTS from the following :

#### Theme Electricity / Electronics

ELEC0055-1	<i>Electronic systems of control mechanism</i> - Christophe GEUZAIN - Suppl : Paul BLEUS		30	30	-	6,5
ELEC0039-1	<i>Network Electromechanical Performance</i> - Jean-Louis LILIE		30	30	-	6,5
ELEC0041-1	<i>Modeling and design of electromagnetic systems</i> - Patrick DULAR, Christophe GEUZAIN		30	30	-	6,5
ELEC0047-1	<i>Electric Power Systems (Dynamic Aspects)</i> - Thierry VAN CUTSEM		30	30	-	6,5

**Theme Energy and the Environment**

ELEC0017-1	<i>Indirect Effects of Electromagnetic Fields</i> - Véronique BEAUVOIS, Jean-Louis LILIE	30	30	-	<b>6,5</b>
GENU0018-1	<i>Nuclear Engineering and Nuclear Power Plant Technology</i> - Philippe MATHIEU	15	15	-	<b>3</b>
MECA0006-1	<i>Thermal Machines and Systems</i> - Jean LEBRUN	30	30	-	<b>6,5</b>
MECA0007-1	<i>Fuel Use</i> - Albert GERMAIN, Angélique LÉONARD	20	-	-	<b>2</b>
MECA0096-1	<i>Hydroelectric Power Plants and Economic Aspects</i> - André LEJEUNE - [2d FW]	15	-	[+]	<b>3</b>

**Theme: Economics and Management**

ECON0007-1	<i>Public Management and Transport Economics</i> - Henry-Jean GATHON	45	-	-	<b>4,5</b>
ECON0207-2	<i>Industrial Economics</i> - Axel GAUTIER	30	-	-	<b>3</b>
GEST0366-1	<i>Advanced Operations Research (english)</i> - Yves CRAMA	45	-	-	<b>4,5</b>

[...] Courses totalling 13 ECTS AT MOST can be chosen from other Applied Science departments option courses.

[...] Courses totalling 5.5 ECTS AT MOST can be chosen from the University of Liège programme.

ASTG0012-1	<i>Stage industriel</i>	-	-	-	<b>13</b>
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*Notice* : This training programme, lasting a minimum of two months, can replace courses totalling 13 ECTS, with the approval of the President of the Board of Studies.