

## First Year

### Compulsory courses

GBIO0009-1	<i>Bioinformatics</i> (english language) - Kristel VAN STEEN	30	30	-	5
GBIO0010-1	<i>Bioinstrumentation</i> - Jacques DESTINÉ	30	30	-	5
GBIO0012-2	<i>Biomechanics</i> (english language) - Liesbet GERIS - [1d FW]	30	30	[+]	5
GBIO0008-1	<i>Medical imaging</i> - Christophe PHILLIPS	30	30	-	5
GBIO0011-1	<i>Biological systems modeling</i> - Pierre DAUBY, Rodolphe SEPULCHRE	30	30	-	5
GBIO0013-1	<i>Transport phenomena in biology</i> - Dominique TOYE	30	30	-	5

### Non specific technical training

[...] With the help of a supervisor of their choice and with the approval of the cycle's Jury President, students choose, from the courses' programme of the Faculty of Applied Sciences, courses not already followed totalling 30 ECTS. The courses must secure the prerequisites for optional courses in the second year.

### Compulsory courses

GBIO0001-1	<i>Biophysics</i> (english language) - Liesbet GERIS	30	30	-	5
BIOC0002-1	<i>Biochemistry</i> - Paulette CHARLIER	30	30	-	5
GBIO0002-1	<i>Genetics and molecular biology</i> - Michel GEORGES - Suppl : Marc MULLER	30	30	-	5
GBIO0005-1	<i>Introduction to neurosciences</i> - Shibeshih BELACHEW, Pierre MAQUET	30	30	-	5
GBIO0004-1	<i>Physiology of the systems</i> - Philippe KOLH	30	30	-	5
GBIO0003-1	<i>Molecular and cellular physiology</i> - Olivier PEULEN	30	30	-	5

## Second Year

### Compulsory courses

ATFE0016-1	<i>Final Work (including an introduction to methodology and research)</i> - COLLÉGIALITÉ -	-	-	-	25
[...]	Choose one course from the ULg courses' programme or from the list below. In any case, this course must have the approval of the cycle's Jury President				
LANG1957-1	<i>Dutch Engineering</i> (dutch language) - Claudine COLIN	60	-	-	5
LANG1958-1	<i>German Engineering</i> (german language) - Françoise CARL	60	-	-	5

### Research Focus

#### Optional courses

Choose courses totaling 30 credits from the following list.

The choice of a course not included in this list must be approved by the President of the cycle's Jury.

#### Imagery and bioinstrumentation

MATH0049-1	<i>Morphological Characterization of Unordered Systems</i> - Silvia BLACHER	30	30	-	5
ELEN0016-1	<i>Digital Image Processing</i> - Marc VAN DROOGENBROECK	30	30	-	5
ELEN0071-1	<i>Digital Signal Processing</i> - Jacques VERLY	30	30	-	5
ELEN0072-1	<i>Statistical Signal Processing</i> - Jacques VERLY	30	30	-	5
ELEN0035-1	<i>CAD in (Analogue and Digital) On-Demand Microelectronics</i> - Jacques DESTINÉ	30	30	-	5
ELEN0038-1	<i>Microsystems</i> - Jacques DESTINÉ	30	30	-	5
ELEN0069-1	<i>Nanoelectronics / Optoelectronics</i> - Benoît VANDERHEYDEN	30	30	-	5
ELEC0017-1	<i>Indirect Effects of Electromagnetic Fields</i> - Véronique BEAUVOIS, Jean-Louis LILIEEN	30	30	-	5
ELEC0041-1	<i>Modeling and design of electromagnetic systems</i> - Patrick DULAR, Christophe GEUZAINÉ	30	30	-	5
ELEC0054-1	<i>Application of Electrical Measuring Systems</i> - Philippe VANDERBEMDEN	30	30	-	5
ELEN0019-1	<i>Treatment of the audio signals : principles and experiments</i> - Jean-Jacques EMBRECHTS	30	30	-	5

#### Bioinformatics and Modeling

ELEN0062-1	<i>Applied Inductive Learning</i> - Pierre GEURTS, Louis WEHENKEL	30	30	-	5
SYST0017-1	<i>Non linear systems</i> - Rodolphe SEPULCHRE	30	30	-	5
GBIO0015-1	<i>A tour in genetic epidemiology</i> (english language) - Kristel VAN STEEN	15	15	-	3

GBIO0016-1	<i>Introduction to systems biology (english language) - Eric BULLINGER, Rodolphe SEPULCHRE</i>	30	30	-	5
BIOC0718-2	<i>Structure-function of biomolecules - Mireille DUMOULIN</i>	15	25	-	4
GENE0436-1	<i>Statistic Genetic - Michel GEORGES</i>	10	10	-	2
GBIO0017-1	<i>Identification of biological processes and networks - Dominique TOYE</i>	10	10	-	2
CHIM0625-1	<i>Molecular mechanics and molecular dynamics - Dominique DEHARENG</i>	10	10	-	2
GENE0434-1	<i>Experimental genomic techniques - Michel GEORGES</i>	10	10	-	2
GBIO0007-1	<i>Gene sequencing and protein analysis : part a - Bernard JORIS</i>	10	10	-	2
MATH0462-1	<i>Discrete optimization - Quentin LOUVEAUX</i>	30	30	-	5
GBIO0014-2	<i>Modeling of physiological systems and clinical applications - Thomas DESAIVE</i>	30	30	-	5
<b>Biomechanics</b>					
PROT0430-2	<i>Biomedical robotics and active prostheses - Olivier BRULS</i>	30	30	-	5
MECA0058-1	<i>Fracture mechanics, damage and fatigue (english language) - Ludovic NOELS</i>	30	30	-	5
MECA0097-1	<i>Digital Methods in Fluid Dynamics - Jean-André ESSERS</i>	15	15	-	3
MECA0446-1	<i>Continuum Mechanics - Jean-Philippe PONTHOT</i>	30	30	-	5
MECA0464-1	<i>Large deformation of solids (english language) - Jean-Philippe PONTHOT</i>	30	30	-	5
GBIO0018-1	<i>Introduction to tissue engineering (english language) - Liesbet GERIS</i>	30	30	-	5
<b>Chemistry and Material Sciences</b>					
BIOC0430-1	<i>Interaction of living material - Christian GRANDFILS</i>	25	-	-	3
CHIM0072-1	<i>Engineering of nanomaterials and divided materials - Benoît HEINRICHS</i>	15	15	-	3
PHYS0038-1	<i>Physics of polymer materials, including plasturgy - N... - Suppl : Eric MARTIN</i>	20	20	-	4
CHIM0667-2	<i>Transport phenomena in complex media (Transport in membranes) - Dominique TOYE</i>	15	15	-	3
MATH0049-1	<i>Morphological Characterization of Unordered Systems - Silvia BLACHER</i>	30	30	-	5
CHIM0069-1	<i>Porous Material Physical Chemistry - Jean-Paul PIRARD</i>	15	-	-	2
META0430-1	<i>Metal-Ceramic Materials - Adrien MAGNÉE</i>	15	10	-	2
BIOL0114-3	<i>Electronic microscopies - Philippe COMPÈRE</i>	45	15	-	5
MECA0462-2	<i>Materials selection (english language) - Jacqueline LECOMTE#BECKERS - [1d FW]</i>	30	30	[+]	5
CHIM0668-1	<i>Stirring and mixing - Dominique TOYE</i>	15	15	-	3
CHIM0067-1	<i>Biochemical Reactors II - Michel CRINE</i>	15	-	-	2
MECA0473-1	<i>Metallic materials Engineering - Jacqueline LECOMTE#BECKERS</i>	30	30	-	5
ASTG0024-1	<i>Placement - COLLÉGIALITÉ</i>	-	-	-	10