

## Vue cycle du programme des cours

|  |  | B1 | Or | Th | Pr | Au  | Cr |
|--|--|----|----|----|----|-----|----|
| <b>Compulsory courses (B1 : 45Cr, B2 : 25Cr)</b> |  |    |    |    |    |     |    |
| INFO0085-1                                       | <i>Compilers</i> - Pierre GEURTS - [75h Proj.]<br><b>Corequis :</b><br>INFO0016-1 - Introduction to the theory of computation  | B1 | Q2 | 25 | -  | [+] | 5  |
| INFO0063-1                                       | <i>Object-oriented software engineering</i> (anglais) - Bernard BOIGELOT - [30h Proj.]   | B1 | Q1 | 30 | 24 | [+] | 5  |
| INFO0016-1                                       | <i>Introduction to the theory of computation</i> (anglais) - Pierre WOLPER   | B1 | Q1 | 30 | 30 | -   | 5  |
| MATH0462-1                                       | <i>Discrete optimization</i> (anglais) - Quentin LOUVEAUX - [25h Proj.]  | B1 | Q1 | 30 | 20 | [+] | 5  |
| INFO0051-1                                       | <i>Logic</i> (anglais) - Pascal GRIBOMONT - [10h Proj.]  | B1 | Q1 | 30 | 25 | [+] | 5  |
| ELEN0060-2                                       | <i>Information and coding theory</i> (anglais) - Louis WEHENKEL - [30h Proj.]  | B1 | Q2 | 30 | 15 | [+] | 5  |
| GEST3162-1                                       | <i>Principles of management</i> (anglais) - Michael GHILISSEN, François PICHAULT, Thierry PIRONET, Didier VAN CAILLIE  | B1 | Q1 | 25 | 25 | -   | 5  |
| PROJ0010-1                                       | <i>Integrated software project, including fundamentals in project management</i> (anglais) - JeanLouis BINOT, Bernard BOIGELOT, Benoît DONNET, Guy LEDUC, Laurent MATHY - [290h Proj.]<br><b>Corequis :</b><br>INFO0063-1 - Object-oriented software engineering | B1 | TA | 10 | -  | [+] | 10 |
| ATFE0015-1                                       | <i>Master thesis</i> (anglais) - COLLÉGIALITÉ - [750h Proj.]   | B2 | TA | -  | -  | [+] | 25 |

### Optional courses (B1 : 15Cr, B2 : 35Cr)

[...] With the agreement of the jury, choose 5 credits in any course programme of the University

**Students will choose one of the orientations below and will carry it on during the second bloc (B1 : 15Cr)**

#### Computer systems and networks (B1 : 15Cr)

##### Compulsory courses

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| INFO0031-1 | <i>Computer network architectures and multimedia</i> (anglais) - Guy LEDUC - [6h Labo., 25h Proj.] | B1 | Q1 | 35 | -  | [+] | 5 |
| INFO0045-3 | <i>Introduction to computer security</i> (anglais) - Benoît DONNET - [8h Labo., 30h Proj.]         | B1 | Q2 | 30 | 10 | [+] | 5 |

##### Optional courses

Choose 5 credits in the following list : (B1 : 5Cr)

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| INFO0064-2 | <i>Embedded systems</i> (anglais) - Bernard BOIGELOT   | B1 | Q1 | 25 | 20 | -   | 3 |
| INFO2055-1 | <i>Embedded systems project</i> (anglais) - Bernard BOIGELOT - [60h Proj.]<br><b>Corequis :</b><br>INFO0064-2 - Embedded systems                                     | B1 | Q2 | -  | -  | [+] | 2 |
| INFO0941-1 | <i>Network measurement and monitoring</i> (anglais) - Benoît DONNET - [60h Proj.]<br><b>Corequis :</b><br>INFO0031-1 - Computer network architectures and multimedia | B1 | Q2 | 20 | -  | [+] | 5 |
| INFO2051-1 | <i>Object-oriented programming on mobile devices</i> (anglais) - Laurent MATHY - [90h Proj.]   | B1 | Q2 | 15 | 10 | [+] | 5 |
| INFO0056-1 | <i>Managing and securing computer networks</i> (anglais) - Guy LEDUC - [12h Labo., 55h Proj.]<br><b>Corequis :</b><br>INFO0045-3 - Introduction to computer security | B1 | Q2 | 30 | -  | [+] | 5 |
| ELEN0062-1 | <i>Applied inductive learning</i> (anglais) - Pierre GEURTS,   | B1 | Q1 | 30 | 5  | [+] | 5 |

EHENKEL - [40h Proj.]

**Intelligent systems (B1 : 15Cr)**

**Compulsory courses**

|            |  |    |    |    |   |     |          |
|------------|--|----|----|----|---|-----|----------|
| ELEN0062-1 | <i>Applied inductive learning</i> (anglais) - Pierre GEURTS,<br>Louis WEHENKEL - [40h Proj.] | B1 | Q1 | 30 | 5 | [+] | <b>5</b> |
|            | <b>Corequis :</b><br>MATH0462-1 - Discrete optimization                                      |    |    |    |   |     |          |

**Optional courses**

Choose 10 credits in the following list : (B1 : 10Cr)

|            |  |    |    |    |    |     |          |
|------------|--|----|----|----|----|-----|----------|
| INFO0064-2 | <i>Embedded systems</i> (anglais) - Bernard BOIGELOT   | B1 | Q1 | 25 | 20 | -   | <b>3</b> |
| INFO2055-1 | <i>Embedded systems project</i> (anglais) - Bernard BOIGELOT - [60h Proj.]                   | B1 | Q2 | -  | -  | [+] | <b>2</b> |
|            | <b>Corequis :</b><br>INFO0064-2 - Embedded systems   |    |    |    |    |     |          |
| ELEN0016-2 | <i>Computer vision</i> (anglais) - Marc VAN DROOGENBROECK - [50h Proj.]                      | B1 | Q1 | 30 | 10 | [+] | <b>5</b> |
| INFO0948-2 | <i>Introduction to intelligent robotics</i> (anglais) - Renaud DETRY - [80h Proj.]           | B1 | Q2 | 30 | 4  | [+] | <b>5</b> |
|            | <b>Corequis :</b><br>ELEN0062-1 - Applied inductive learning<br>ELEN0016-2 - Computer vision |    |    |    |    |     |          |
| INFO0049-1 | <i>Knowledge representation</i> (anglais) - Pascal GRIBOMONT - [50h Proj.]                   | B1 | Q2 | 30 | 25 | [+] | <b>5</b> |
|            | <b>Corequis :</b><br>INFO0051-1 - Logic  |    |    |    |    |     |          |
| INFO2049-1 | <i>Web and Text Analytics</i> (anglais) - Ashwin ITTOO                                       | B1 | Q2 | 30 | -  | -   | <b>5</b> |
|            | <b>Corequis :</b><br>ELEN0062-1 - Applied inductive learning                                 |    |    |    |    |     |          |
| INFO2046-2 | <i>Computational geometry</i> (anglais) - Eric BÉCHET - [95h Proj.]                          | B1 | Q1 | 25 | -  | [+] | <b>5</b> |
| MECA0031-2 | <i>Kinematics and dynamics of mechanisms</i> (anglais) - Olivier BRULS - [40h Proj.]         | B1 | Q2 | 30 | 20 | [+] | <b>5</b> |
| GBIO0002-1 | <i>Genetics and bioinformatics</i> (anglais) - Franck DEQUIEDT,<br>Kristol VAN STEEN         | B1 | Q1 | 30 | 30 | -   | <b>5</b> |

**Single focus (B2 : 30Cr)**

**Research focus (B2 : 30Cr)**

**Students will carry on with their chosen option: (B2 : 10Cr)**

**Computer systems and networks (B2 : 10Cr)**

Choose 10 credits in the following list : (B2 : 10Cr)

|            |   |    |    |    |    |     |          |
|------------|---|----|----|----|----|-----|----------|
| INFO0064-2 | <i>Embedded systems</i> (anglais) - Bernard BOIGELOT                              | B2 | Q1 | 25 | 20 | -   | <b>3</b> |
| INFO2055-1 | <i>Embedded systems project</i> (anglais) - Bernard BOIGELOT - [60h Proj.]        | B2 | Q2 | -  | -  | [+] | <b>2</b> |
|            | <b>Corequis :</b><br>INFO0064-2 - Embedded systems                                |    |    |    |    |     |          |
| INFO0941-1 | <i>Network measurement and monitoring</i> (anglais) - Benoît DONNET - [60h Proj.] | B2 | Q2 | 20 | -  | [+] | <b>5</b> |
|            | <b>Corequis :</b><br>INFO0031-1 - Computer network architectures and multimedia   |    |    |    |    |     |          |

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| INFO2051-1 | <i>Object-oriented programming on mobile devices</i> (anglais) - Laurent MATHY - [90h Proj.]   | B2 | Q2 | 15 | 10 | [+] | 5 |
| ELEN0062-1 | <i>Applied inductive learning</i> (anglais) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.]  | B2 | Q1 | 30 | 5  | [+] | 5 |
| INFO0056-1 | <i>Managing and securing computer networks</i> (anglais) - Guy LEDUC - [12h Labo., 55h Proj.]<br><b>Corequis :</b><br>INFO0045-3 - Introduction to computer security | B2 | Q2 | 30 | -  | [+] | 5 |
| ELEN0002-2 | <i>Introduction to audio and video techniques</i> (anglais) - JeanJacques EMBRECHTS - [8h Labo.]   | B2 | Q1 | 30 | 22 | [+] | 5 |
| SYST0003-1 | <i>Linear control systems</i> (anglais) - Guillaume DRION - [6h Labo.]   | B2 | Q1 | 30 | 30 | [+] | 5 |

**Intelligent systems (B2 : 10Cr)**

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| SYST0003-1 | <i>Linear control systems</i> (anglais) - Guillaume DRION - [6h Labo.] | B2 | Q1 | 30 | 30 | [+] | 5 |
|------------|--|----|----|----|----|-----|---|

Choose 5 credits in the following list : (B2 : 5Cr)

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| INFO0064-2 | <i>Embedded systems</i> (anglais) - Bernard BOIGELOT   | B2 | Q1 | 25 | 20 | -   | 3 |
| INFO2055-1 | <i>Embedded systems project</i> (anglais) - Bernard BOIGELOT - [60h Proj.]<br><b>Corequis :</b><br>INFO0064-2 - Embedded systems   | B2 | Q2 | -  | -  | [+] | 2 |
| ELEN0016-2 | <i>Computer vision</i> (anglais) - Marc VAN DROOGENBROECK - [50h Proj.]  | B2 | Q1 | 30 | 10 | [+] | 5 |
| INFO0948-2 | <i>Introduction to intelligent robotics</i> (anglais) - Renaud DETRY - [80h Proj.]<br><b>Corequis :</b><br>ELEN0016-2 - Computer vision<br>ELEN0062-1 - Applied inductive learning | B2 | Q2 | 30 | 4  | [+] | 5 |
| INFO0049-1 | <i>Knowledge representation</i> (anglais) - Pascal GRIBOMONT - [50h Proj.]<br><b>Prérequis :</b><br>INFO0051-1 - Logic   | B2 | Q2 | 30 | 25 | [+] | 5 |
| INFO0939-1 | <i>High performance scientific computing</i> (anglais) - Christophe GEUZAIN - [20h Proj.]  | B2 | Q1 | 30 | 15 | [+] | 5 |
| INFO2046-2 | <i>Computational geometry</i> (anglais) - Eric BÉCHET - [95h Proj.]  | B2 | Q1 | 25 | -  | [+] | 5 |
| INFO2049-1 | <i>Web and Text Analytics</i> (anglais) - Ashwin ITTOO<br><b>Corequis :</b><br>ELEN0062-1 - Applied inductive learning   | B2 | Q2 | 30 | -  | -   | 5 |
| MECA0031-2 | <i>Kinematics and dynamics of mechanisms</i> (anglais) - Olivier BRULS - [40h Proj.]   | B2 | Q2 | 30 | 20 | [+] | 5 |
| GBIO0002-1 | <i>Genetics and bioinformatics</i> (anglais) - Franck DEQUIEDT, Kristel VAN STEEN  | B2 | Q1 | 30 | 30 | -   | 5 |

[...] Choose 20 credits in your option, in the other option or in the list below :

**Computer science**

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| INFO0031-1 | <i>Computer network architectures and multimedia</i> (anglais) - Guy LEDUC - [6h Labo., 25h Proj.] | B2 | Q1 | 35 | -  | [+] | 5 |
| INFO0045-3 | <i>Introduction to computer security</i> (anglais) - Benoît DONNET - [8h Labo., 30h Proj.]         | B2 | Q2 | 30 | 10 | [+] | 5 |
| INFO0026-3 | <i>Computer graphics</i> (anglais) - Eric BÉCHET - [45h Proj.]                                     | B2 | Q2 | 24 | 24 | [+] | 5 |

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| INFO0027-2 | <i>Programming techniques</i> (anglais) - Laurent MATHY - [70h Proj.]  | B2 | Q2 | 30 | 24 | [+] | 5 |
| INFO0050-1 | <i>Constraint programming projects</i> (anglais) - Pascal GRIBOMONT - [80h Proj.]<br><b>Corequis :</b><br>INFO0049-1 - Knowledge representation  | B2 | TA | 15 | 10 | [+] | 5 |
| INFO0060-1 | <i>Concurrent system verification and temporal logic</i> (anglais) - Bernard BOIGELOT, Pascal GRIBOMONT, Pierre WOLPER - [20h Proj.]<br><b>Prérequis :</b><br>INFO0016-1 - Introduction to the theory of computation<br>INFO0051-1 - Logic | B2 | Q2 | 30 | 10 | [+] | 5 |

### Signal processing

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| ELEN0019-2 | <i>Audio signal processing : principles and experiments</i> (anglais) - JeanJacques EMBRECHTS - [24h Labo., 30h Proj.] | B2 | Q1 | 5  | -  | [+] | 5 |
| ELEN0071-1 | <i>Digital Signal Processing</i> (anglais) - Jacques VERLY - [40h Proj.]   | B2 | Q2 | 45 | 15 | [+] | 5 |

### Biomedical engineering and bioinformatics

|            |   |    |    |    |    |     |   |
|------------|---|----|----|----|----|-----|---|
| GBIO0008-2 | <i>Medical imaging</i> (anglais) - Christophe PHILLIPS - [8h Labo., 1j T. t.]   | B2 | Q2 | 33 | 12 | [+] | 5 |
| GBIO0009-1 | <i>Topics in bioinformatics</i> (anglais) - Kristel VAN STEEN - [35h Proj.]<br><b>Prérequis :</b><br>GBIO0002-1 - Genetics and bioinformatics                         | B2 | Q1 | 25 | 15 | [+] | 5 |
| GBIO0029-1 | <i>Bioelectronics</i> (anglais) - Michael KRAFT - [20h Labo., 20h Proj.]  | B2 | Q1 | 30 | 15 | [+] | 5 |
| GBIO0030-1 | <i>Computational approaches to statistical genetics</i> (anglais) - Kristel VAN STEEN - [35h Proj.]<br><b>Prérequis :</b><br>GBIO0002-1 - Genetics and bioinformatics | B2 | Q2 | 25 | 15 | [+] | 5 |
| GBIO0031-1 | <i>Learning from genomic data</i> (anglais) - Kristel VAN STEEN - [150h Proj.]<br><b>Prérequis :</b><br>GBIO0002-1 - Genetics and bioinformatics                      | B2 | Q2 | -  | -  | [+] | 5 |

### Applied mathematics and modelling

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| MATH0461-2 | <i>Introduction to numerical optimization</i> (anglais) - Quentin LOUVEAUX - [25h Proj.] | B2 | Q1 | 30 | 20 | [+] | 5 |
|------------|--|----|----|----|----|-----|---|

### Electronics

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| ELEN0078-2 | <i>Acoustics and electroacoustics</i> (anglais) - JeanJacques EMBRECHTS - [8h Labo.] | B2 | Q2 | 30 | 22 | [+] | 5 |
| ELEN0037-1 | <i>Microelectronics and IC design</i> (anglais) - Michael KRAFT - [40h Proj.]        | B2 | Q2 | 30 | 20 | [+] | 5 |
| ELEN0038-1 | <i>Microsystems</i> (anglais) - Michael KRAFT - [20h Labo., 40h Proj.]               | B2 | Q2 | 30 | 5  | [+] | 5 |

### Internships and projects (maximum 15 crédits)

|            |  |    |    |   |   |     |    |
|------------|--|----|----|---|---|-----|----|
| ASTG9005-1 | <i>Research Internship</i> (anglais) - Benoît DONNET - [300h Proj.]          | B2 | TA | - | - | [+] | 10 |
| ASTG0021-1 | <i>Technical company internship</i> (anglais) - Laurent MATHY - [300h Proj.] | B2 | TA | - | - | [+] | 10 |

*Remarque :* the two internships are mutually exclusive

PROJ0011-1 *Personal student project* (anglais) - Bernard BOIGELOT, B2 TA - - [+] 5  
COLLÉGIALITÉ - [150h Proj.]

**Programme transitoire à destination des étudiants ayant réussi leur master 1 de "Master en ingénieur civil en informatique, à finalité spécialisée en gestion" en 2014-2015**

**Programme transitoire à destination des étudiants ayant réussi leur master 1 de "Master en ingénieur civil en informatique, à finalité approfondie" en 2014-2015**

**Optional courses (B1 : 30Cr)**

**Single focus (B1 : 30Cr)**

**Research focus (B1 : 30Cr)**

**Pursuit of the option : (B1 : 10Cr)**

**Computer systems and networks (B1 : 10Cr)**

Choose 10 credits in the following list : (B1 : 10Cr)

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| INFO0064-2 | <i>Embedded systems</i> (anglais) - Bernard BOIGELOT   | B1 | Q1 | 25 | 20 | -   | 3 |
| INFO2055-1 | <i>Embedded systems project</i> (anglais) - Bernard BOIGELOT - [60h Proj.]                       | B1 | Q2 | -  | -  | [+] | 2 |
| INFO0941-1 | <i>Network measurement and monitoring</i> (anglais) - Benoît DONNET - [60h Proj.]                | B1 | Q2 | 20 | -  | [+] | 5 |
| INFO2051-1 | <i>Object-oriented programming on mobile devices</i> (anglais) - Laurent MATHY - [90h Proj.]     | B1 | Q2 | 15 | 10 | [+] | 5 |
| ELEN0062-1 | <i>Applied inductive learning</i> (anglais) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.]        | B1 | Q1 | 30 | 5  | [+] | 5 |
| INFO0056-1 | <i>Managing and securing computer networks</i> (anglais) - Guy LEDUC - [12h Labo., 55h Proj.]    | B1 | Q2 | 30 | -  | [+] | 5 |
| ELEN0002-2 | <i>Introduction to audio and video techniques</i> (anglais) - JeanJacques EMBRECHTS - [8h Labo.] | B1 | Q1 | 30 | 22 | [+] | 5 |
| SYST0003-1 | <i>Linear control systems</i> (anglais) - Guillaume DRION - [6h Labo.]                           | B1 | Q1 | 30 | 30 | [+] | 5 |

**Intelligent systems (B1 : 10Cr)**

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| SYST0003-1 | <i>Linear control systems</i> (anglais) - Guillaume DRION - [6h Labo.] | B1 | Q1 | 30 | 30 | [+] | 5 |
|------------|--|----|----|----|----|-----|---|

Choose 5 credits in the following list : (B1 : 5Cr)

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| INFO0064-2 | <i>Embedded systems</i> (anglais) - Bernard BOIGELOT                               | B1 | Q1 | 25 | 20 | -   | 3 |
| INFO2055-1 | <i>Embedded systems project</i> (anglais) - Bernard BOIGELOT - [60h Proj.]         | B1 | Q2 | -  | -  | [+] | 2 |
| ELEN0016-2 | <i>Computer vision</i> (anglais) - Marc VAN DROOGENBROECK - [50h Proj.]            | B1 | Q1 | 30 | 10 | [+] | 5 |
| INFO0948-2 | <i>Introduction to intelligent robotics</i> (anglais) - Renaud DETRY - [80h Proj.] | B1 | Q2 | 30 | 4  | [+] | 5 |

|            |   |    |    |    |    |     |   |
|------------|---|----|----|----|----|-----|---|
| INFO0049-1 | <i>Knowledge representation</i> (anglais) - Pascal GRIBOMONT - [50h Proj.]                | B1 | Q2 | 30 | 25 | [+] | 5 |
| INFO0939-1 | <i>High performance scientific computing</i> (anglais) - Christophe GEUZAIN - [20h Proj.] | B1 | Q1 | 30 | 15 | [+] | 5 |
| INFO2046-2 | <i>Computational geometry</i> (anglais) - Eric BÉCHET - [95h Proj.]                       | B1 | Q1 | 25 | -  | [+] | 5 |
| INFO2049-1 | <i>Web and Text Analytics</i> (anglais) - Ashwin ITTOO                                    | B1 | Q2 | 30 | -  | -   | 5 |
| MECA0031-2 | <i>Kinematics and dynamics of mechanisms</i> (anglais) - Olivier BRULS - [40h Proj.]      | B1 | Q2 | 30 | 20 | [+] | 5 |
| GBIO0002-1 | <i>Genetics and bioinformatics</i> (anglais) - Franck DEQUIEDT, Kristel VAN STEEN         | B1 | Q1 | 30 | 30 | -   | 5 |

[...] Choose 20 credits in your option, in the other option or in the list below :

#### Computer science

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| INFO0031-1 | <i>Computer network architectures and multimedia</i> (anglais) - Guy LEDUC - [6h Labo., 25h Proj.]                                   | B1 | Q1 | 35 | -  | [+] | 5 |
| INFO0045-3 | <i>Introduction to computer security</i> (anglais) - Benoît DONNET - [8h Labo., 30h Proj.]   | B1 | Q2 | 30 | 10 | [+] | 5 |
| INFO0026-3 | <i>Computer graphics</i> (anglais) - Eric BÉCHET - [45h Proj.]   | B1 | Q2 | 24 | 24 | [+] | 5 |
| INFO0027-2 | <i>Programming techniques</i> (anglais) - Laurent MATHY - [70h Proj.]  | B1 | Q2 | 30 | 24 | [+] | 5 |
| INFO0050-1 | <i>Constraint programming projects</i> (anglais) - Pascal GRIBOMONT - [80h Proj.]  | B1 | TA | 15 | 10 | [+] | 5 |
| INFO0060-1 | <i>Concurrent system verification and temporal logic</i> (anglais) - Bernard BOIGELOT, Pascal GRIBOMONT, Pierre WOLPER - [20h Proj.] | B1 | Q2 | 30 | 10 | [+] | 5 |

#### Signal processing

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| ELEN0019-2 | <i>Audio signal processing : principles and experiments</i> (anglais) - JeanJacques EMBRECHTS - [24h Labo., 30h Proj.] | B1 | Q1 | 5  | -  | [+] | 5 |
| ELEN0071-1 | <i>Digital Signal Processing</i> (anglais) - Jacques VERLY - [40h Proj.]   | B1 | Q2 | 45 | 15 | [+] | 5 |

#### Biomedical engineering and bioinformatics

|            |   |    |    |    |    |     |   |
|------------|---|----|----|----|----|-----|---|
| GBIO0008-2 | <i>Medical imaging</i> (anglais) - Christophe PHILLIPS - [8h Labo., 1j T. t.]                       | B1 | Q2 | 33 | 12 | [+] | 5 |
| GBIO0009-1 | <i>Topics in bioinformatics</i> (anglais) - Kristel VAN STEEN - [35h Proj.]                         | B1 | Q1 | 25 | 15 | [+] | 5 |
| GBIO0029-1 | <i>Bioelectronics</i> (anglais) - Michael KRAFT - [20h Labo., 20h Proj.]                            | B1 | Q1 | 30 | 15 | [+] | 5 |
| GBIO0030-1 | <i>Computational approaches to statistical genetics</i> (anglais) - Kristel VAN STEEN - [35h Proj.] | B1 | Q2 | 25 | 15 | [+] | 5 |
| GBIO0031-1 | <i>Learning from genomic data</i> (anglais) - Kristel VAN STEEN - [150h Proj.]                      | B1 | Q2 | -  | -  | [+] | 5 |

#### Applied mathematics and modelling

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| MATH0461-2 | <i>Introduction to numerical optimization</i> (anglais) - Quentin LOUVEAUX - [25h Proj.] | B1 | Q1 | 30 | 20 | [+] | 5 |
|------------|--|----|----|----|----|-----|---|

#### Electronics

|            |  |    |    |    |    |     |   |
|------------|--|----|----|----|----|-----|---|
| ELEN0078-2 | <i>Acoustics and electroacoustics</i> (anglais) - JeanJacques EMBRECHTS - [8h Labo.] | B1 | Q2 | 30 | 22 | [+] | 5 |
|------------|--|----|----|----|----|-----|---|

ELEN0037-1 *Microelectronics and IC design* (anglais) - Michael KRAFT - [40h Proj.] B1 Q2 30 20 [+] 5

ELEN0038-1 *Microsystems* (anglais) - Michael KRAFT - [20h Labo., 40h Proj.] B1 Q2 30 5 [+] 5

**Internship and projects (maximum 15 crédits)**

ASTG9005-1 *Research Internship* (anglais) - Benoît DONNET - [300h Proj.] B1 TA - - [+] 10

ASTG0021-1 *Technical company internship* (anglais) - Laurent MATHY - [300h Proj.] B1 TA - - [+] 10

*Remarque* : the two internships are mutually exclusive

PROJ0011-1 *Personal student project* (anglais) - Bernard BOIGELOT, COLLÉGIALITÉ - [150h Proj.] B1 TA - - [+] 5

**Compulsory courses (B1 : 30Cr)**

ATFE0015-1 *Master thesis* (anglais) - COLLÉGIALITÉ - [750h Proj.] B1 TA - - [+] 25

[...] With the agreement of the jury, choose 5 credits in any course programme of the University