

## Two-Year Master Program (120 ECTS)

### First Year

#### Compulsory courses

GCIV0201-1	<i>Choice and maximisation of construction materials</i> - Luc COURARD	30	30	-	<b>5</b>
GCIV2032-1	<i>Design and means of erection of structures and bridges</i> - Jean-Marie CREMER, Jean-Marc FRANSSSEN	30	30	-	<b>5</b>
GCIV2033-2	<i>Steel, concrete, timber and composite steel-concrete construction</i> - Jean-Claude DOTREPPE, Jean-Marc FRANSSSEN, Jean-Pierre JASPART - [2d FW]	60	60	[+]	<b>10</b>
GEOL0001-1	<i>Geology and Geology for Engineers</i> - Alain DASSARGUES - [2d FW]	35	25	[+]	<b>5</b>
GCIV2034-1	<i>Applied hydraulics</i> - Michel PIROTON	30	30	-	<b>5</b>
GCIV2035-1	<i>Environmental hydrodynamics</i> - Benjamin J. DEWALS, Michel PIROTON	30	30	-	<b>5</b>
GCIV2036-1	<i>Soil and rock mechanics</i> - Albert BOLLE, Frédéric COLLIN	25	25	-	<b>4</b>
GCIV2037-1	<i>Structural Mechanics II</i> - Hervé DEGÉE	35	35	-	<b>6</b>
GCIV0185-2	<i>Numerical methods in Civil and Geological Engineering - I. Linear methods</i> - <i>Linear methods</i> - Hervé DEGÉE, Michel PIROTON	30	30	-	<b>10</b>
	- <i>Linear and non-linear methods</i> - Robert CHARLIER, Vincent DE VILLE DE GOYET	30	30	-	
GCIV2038-1	<i>Planning and technical-economic analysis</i> - Jean MARCHAL	15	15	-	<b>3</b>
GCIV2039-2	<i>Seminar</i> - Serge CESCOTTO, COLLÉGIALITÉ - [2d FW]	20	-	[+]	<b>2</b>

*Notice* : Students who have, in their BAC studies, already the compulsory course  
GEOL0001-1 *Geology and Engineering Geology* featuring on this Master's  
programme are obliged to replace it by a course chosen from:

- \* GEOL0023-4 *Engineering Geology (integrated group project* - 10h+30h+2jT.t -  
5 crédits - NGUYEN F.
- \* ARCH00003-4 *Techniques of Building Construction I - Part I* - 30h+30h+  
2,5jT.t - 5 credits - N.

### Second year

#### Compulsory courses

GCIV2040-1	<i>Hydraulic constructions</i> - Sébastien ERPICUM, Jean MARCHAL, Philippe RIGO - [3d FW]	60	60	[+]	<b>10</b>
ATFE0010-1	<i>Final Work (including an introduction to methodology and research)</i> - COLLÉGIALITÉ - Final year trip: visits to works of art (optional).	-	-	-	<b>20</b>

Choose one focus from the following :

#### Research Focus

##### Optional courses

*Choose one option from the following :*

##### Civil Engineering Works

PRCO0001-1	<i>Integrated civil engineering project</i> - Serge CESCOTTO, COLLÉGIALITÉ, Jean-Marc FRANSSSEN	-	80	-	<b>8</b>
	<i>Notice</i> : Project accompanied by a placement and courses in the following subjects :				
GCIV2048-1	<i>Hydraulic Structures - Part II</i> - Philippe RIGO	20	20	-	<b>4</b>
GCIV0133-5	<i>Maintenance, restoration and protection of buildings</i> - Luc COURARD, André PLUMIER	20	10	-	<b>3</b>

GCIV2049-1	<i>Geotechnical structures</i> - Albert BOLLE, Robert CHARLIER - [1d FW]	30	30	[+]	6
GCIV2050-1	<i>Accidental and exceptional actions</i> - Jean-Claude DOTREPPE, Jean-Marc FRANSSSEN, Jean-Pierre JASPART, André PLUMIER	20	20	-	4
ASTG0016-1	<i>Placement</i> - COLLÉGIALITÉ	-	-	-	5

#### Transport and Mobility

ARCH2008-1	<i>Design and planning of urban areas.</i> - Sigrid REITER	15	15	-	3
ARCH2017-1	<i>Design and public areas planning</i> - Philippe HANOCQ	30	40	-	7
GCIV2049-2	<i>Geotechnical structures</i> - Albert BOLLE, Robert CHARLIER - [1d FW]	20	20	[+]	4
ARCH2014-1	<i>Urban and territorial development</i> - Philippe HANOCQ	30	-	-	3
GCIV2052-1	<i>Techniques for analysing and developing integrated mobility and transport projects</i> - Philippe HANOCQ, Jean MARCHAL	30	50	-	8
ARCH0068-3	<i>Urban design and site analysis</i> - Jacques TELLER	20	-	-	2
GCIV2053-1	<i>Inland waterways</i> - Philippe RIGO	15	15	-	3

#### Architecture and Building Engineering

ELEN0077-4	<i>Introduction to acoustics and lighting</i> - Jean-Jacques EMBRECHTS	30	30	-	6
ARCH2015-1	<i>Air conditioning</i> - N... - Suppl : Philippe ANDRE	30	35	-	5
GCIV2042-2	<i>Designing buildings in high-risk areas</i> - André PLUMIER	16	8	-	3
GCIV2063-1	<i>Planning buildings, co-ordination and safety on building sites</i> - Jean-Marie RIGO	15	15	-	3
ARCH0019-2	<i>Project management II</i> - N... - Suppl : Dimitri SCHMITZ - [2d FW]	15	15	[+]	4
ELEC0434-1	<i>Residential electric installations</i> - Jean-Louis LILIEN	15	15	-	3
GCIV0133-6	<i>Maintenance, restoration and protection of buildings</i> - Luc COURARD, André PLUMIER	30	15	-	4
ARCH0059-1	<i>Pathology of buildings</i> - N...	15	-	-	2

#### Teaching and civil engineering

GEOL0277-1	<i>Remediation of contaminated sites</i> - Alain DASSARGUES, Stoyan GAYDARDZHIEV - [1d FW]	15	15	[+]	3
GCIV2056-1	<i>Environmental building design</i> - Luc COURARD, Jean-Pierre JASPART	20	10	-	3
GCIV2057-1	<i>Hydropower exploitation</i> - Sébastien ERPICUM, Olivier LÉONARD, Michel PIROTON	35	25	-	5
GCIV2058-1	<i>Environmental geotechnics</i> - Albert BOLLE, Robert CHARLIER, Jean-Marie RIGO - [1d FW]	20	20	[+]	4
GCIV2059-1	<i>Management of drainage bassin and hydrographic constructions</i> - Benjamin J. DEWALS, Michel PIROTON	20	20	-	4
GCIV2060-1	<i>Environmental management of hydraulic constructions</i> - Benjamin J. DEWALS, Michel PIROTON	20	10	-	3
GCIV0615-1	<i>Valorisation of industrial byproducts and waste in civil engineering</i> - Luc COURARD	20	20	-	3
ASTG0016-1	<i>Placement</i> - COLLÉGIALITÉ	-	-	-	5

#### Professional Focus

##### Compulsory courses

GEST3000-1	<i>First steps in an enterprise</i> - Robert NONDONFAZ, Bernard SURLEMONT	0,5	-	-	2
GEST3001-1	<i>Organization analysis</i> - Annie CORNET	-	-	-	3
GEST3002-1	<i>Human Resources Management</i> - Jocelyne ROBERT	16	-	-	3
GEST3003-1	<i>Competitive Strategy in the Marketplace</i> (english) - Michael GHILISSEN	16	-	-	3
GEST3004-1	<i>Marketing (operations and management)</i> (english) - Michael GHILISSEN	16	-	-	3
GEST3005-1	<i>Accountancy and Finance</i> - Jacques BERWART	24	-	-	4
GEST3006-1	<i>Production (Supply chain management)</i> (english) - Yasemin ARDA	45	-	-	3
GSTG3001-1	<i>Internship</i> - COLLÉGIALITÉ	-	-	-	6

##### Optional courses

Choose one of the following courses :

GEST3010-1	<i>Production 2 (Supply Chain Management 2nd part)</i> (english) - Robert NONDONFAZ	-	-	-	3
GEST3011-1	<i>ICT in the service of the company</i> - Alain DUBOIS	30	-	-	3

### Adjusted programme for student of the Bachelors in Civil Engineering who have not taken the "Structure" option

#### Students studying for the Bachelors in Civil Engineering who have not chosen the appropriate option :

- \* must take all the so-called "prerequisite" courses hereafter, if they were not taken during the 1st cycle. These courses must be taken during the 1st year of the masters and some 1st-year compulsory courses must be rolled over to the 2nd year.
- \* must subsequently reduce the number of courses they choose to take in the 2nd year of the masters. If all the "prerequisite" courses must be taken, it will be impossible for them to choose which courses they take.
- \* cannot choose the professional "management" focus.

The program adapted by these students has to receive the preliminary agreement of the Jury.

#### Compulsory prerequisites

GCIV0097-1	<i>Steel and concrete constructions I</i> - Jean-Claude DOTREPPE, Jean-Pierre JASPART	30	30	-	<b>5</b>
GCIV0603-1	<i>Geotechnics</i> - Robert CHARLIER	30	30	-	<b>5</b>
GCIV0604-1	<i>Hydraulics</i> - Michel PIROTON	15	15	-	<b>3</b>
GCIV0184-2	<i>Building Materials</i> - Luc COURARD	30	30	-	<b>5</b>
MECA0012-5	<i>Mechanics of materials</i> (english) - Serge CESCOTTO	30	30	-	<b>5</b>
MECA0442-1	<i>Mechanics of materials II</i> - Serge CESCOTTO	15	15	-	<b>2</b>
GCIV0607-1	<i>Structural mechanics</i> - Jean-Marc FRANSEN	30	30	-	<b>5</b>