

## Cycle view of the study programme

B1 Or Th Pr Au Cr

Depending on your educational background or depending on the focus, it is possible that the prerequisites / corequisites for the 1st year of the programme are presented in the block 2. You are therefore invited to read through the list of courses in block 2 even if you are registering for the first time in this master.

As part of the Civil Construction Engineering Masters, students must follow or approve 90 core training credits (including placement and final dissertation) and 30 credits from one of the two specialised courses, i.e. `civil engineering` or `urban and environmental engineering`.

Ideally, students taking the Masters will have acquired the skills and knowledge corresponding to 40 credits for the specific technical classes in the field of construction organised as part of the Civil Engineering Bachelors.

### Compulsory courses (B1 : 60Cr, B2 : 30Cr)

GCIV0201-2	<i>Concretes and new Materials Technologies</i> - Luc COURARD - [0,5d FW, 6h Labo., 8h Proj.]	B1	Q1	34	20	[+]	5
GCIV0643-1	<i>Prestressed concrete structures and masonry</i> - Hervé DEGÉE, Boyan MIHAYLOV - [1d FW, 20h Proj.] <b>Corequisite :</b> GCIV0607-2 - Analyse des structures I GCIV2173-1 - Béton armé	B1	Q1	30	30	[+]	5
GCIV0644-1	<i>Metallic and Steel-Concrete composite Structures</i> - JeanFrançois DEMONCEAU, JeanPierre JASPART - [1d FW, 20h Proj.] <b>Corequisite :</b> GCIV0607-2 - Analyse des structures I GCIV0185-7 - Méthodes numériques linéaires en génie civil et géologique GCIV2172-1 - Calcul d'éléments métalliques	B1	Q2	40	20	[+]	5
GCIV0646-1	<i>Buildings conception and execution</i> - JeanFrançois DEMONCEAU, JeanMarc FRANSSSEN, Boyan MIHAYLOV - [1d FW]	B1	Q2	40	-	[+]	5
GCIV2034-1	<i>Free surface flow</i> - Michel PIROTON - [1d FW, 2h Labo., 10h Proj.] <b>Corequisite :</b> GCIV0604-3 - Hydraulique	B1	Q1	30	28	[+]	5
GCIV2035-1	<i>Fluvial hydrodynamics</i> - Benjamin DEWALS - [30h Proj.] <b>Corequisite :</b> GCIV0185-7 - Méthodes numériques linéaires en génie civil et géologique GCIV2034-1 - Ecoulements à surface libre	B1	Q2	30	30	[+]	5
GCIV2036-2	<i>Soils and Rocks mechanics</i> - Frédéric COLLIN - [1d FW, 5h Proj.]	B1	Q1	30	30	[+]	5
GCIV2037-1	<i>Structures analysis</i> - Vincent DENOËL, Philippe RIGO - [15h Proj.] <b>Corequisite :</b> GCIV0607-2 - Analyse des structures I	B1	Q2	35	30	[+]	5
GCIV0185-7	<i>Straight-line Numerical Methods for Civil Engineering and Geology</i> - Laurent DUCHENE, Michel PIROTON - [30h Proj.]	B1	Q1	25	35	[+]	5
GCIV0009-1	<i>Water Constructions in River, Conception and Execution</i> - Sébastien ERPICUM, Philippe RIGO - [1d FW, 2h Labo., 16h Proj.] <b>Corequisite :</b> GCIV2034-1 - Ecoulements à surface libre	B1	Q2	34	24	[+]	5
GCIV0607-2	<i>Structures Analysis I</i> - JeanMarc FRANSSSEN	B1	Q1	35	30	-	5
GCIV2049-1	<i>Geotechnical Structures Conception and Execution</i> - Frédéric COLLIN - [20d Proj.] <b>Corequisite :</b> GCIV2037-1 - Analyse des structures II GCIV2036-2 - Mécanique des sols et des roches GCIV0603-2 - Géotechnique et infrastructures	B1	Q2	20	40	[+]	5
ASTG0016-1	<i>Placement</i> - Sébastien ERPICUM - [20d FW]	B2	Q2	-	-	[+]	5
ATFE0010-1	<i>Final Work (including an introduction to methodology and research)</i> - COLLÉGIALITÉ, JeanMarc FRANSSSEN - [500h Proj.]	B2	Q2	-	-	[+]	25

*Notice* : Final year trip: visits to works of art (optional)

**Optional courses (B2 : 30Cr)**

**Choose one focus from the following : (B2 : 30Cr)**

**Professional focus in "civil engineering" (B2 : 30Cr)**

GCIV2065-1	<i>Designing and executing control structures for rivers and hydraulic networks.</i> - Benjamin DEWALS, Philippe RIGO - [1d FW, 12h Proj.]	B2	Q1	18	18	[+]	3
GCIV2174-1	<i>Road Infrastructure Conception and Execution</i> - Robert CHARLIER - [20d FW]	B2	Q1	20	10	[+]	3
GCIV0642-1	<i>Bridges Conception and Execution</i> - Vincent DE VILLE DE GOYET - [40h Proj.]	B2	Q1	-	40	[+]	3
PRCO0001-1	<i>Integrated project</i> - Robert CHARLIER, Laurent DUCHENE, Boyan MIHAYLOV - [0,5d FW, 100h Proj.]	B2	Q1	-	90	[+]	7
GEST3162-1	<i>Principles of management</i> (english language) - Michael GHILISSEN, François PICHAULT, Thierry PIRONET, Didier VAN CAILLIE - Suppl : Fanny FOX	B2	Q1	25	25	-	5

Choose courses totalling 9 ECTS from the following : (B2 : 9Cr)

[...] Students who have not followed the GCIV2172-1, GCIV2173-1, GCIV0603-2 and GCIV0604-3 of the 'Constructions' option of the Civil Engineering Bachelor's programme or acquired the corresponding skills and knowledge will incorporate these four courses as a priority into their programme.

GCIV2178-1	<i>Natural and technological risks in civil engineering</i> (english language) - JeanFrançois DEMONCEAU, Benjamin DEWALS - [10h Proj., 1d FW]	B2	Q1	15	15	[+]	3
GCIV2063-1	<i>Planning buildings, co-ordination and safety on building sites</i> - Sebastian KREUSCH	B2	Q1	15	15	-	3
GCIV2048-1	<i>Ports and Waterways</i> (english language) - Philippe RIGO - [1d FW, 10h Proj.]	B2	Q1	24	12	[+]	3
GCIV2066-1	<i>Fundamentals of transportation : transport planning</i> (english language) - Mario COOLS	B2	Q1	15	15	-	3
GCIV0133-9	<i>Maintenance, repair and reinforcement of constructions</i> (english language) - Luc COURARD - [1d FW]	B2	Q1	20	20	[+]	3
GCIV0165-2	<i>Timber constructions</i> (english language) - JeanMarc FRANSSSEN - [15h Proj.]	B2	Q1	15	15	[+]	3
GCIV2171-1	<i>Non linear finite elements</i> (english language) - Frédéric COLLIN, Vincent DE VILLE DE GOYET - [15h Proj.] <b>Corequisite :</b> GCIV0185-7 - Méthodes numériques linéaires en génie civil et géologique	B2	Q1	20	20	[+]	3
GCIV2176-1	<i>Experimental modelling in civil engineering</i> (english language) - Frédéric COLLIN, Sébastien ERPICUM - [10h Labo., 10h Proj.]	B2	Q1	10	30	[+]	3
GCIV2050-2	<i>Seismic engineering</i> (english language) - Vincent DENOËL, Boyan MIHAYLOV - [15h Proj.]	B2	Q1	15	15	[+]	3
GCIV2042-2	<i>Fire safety engineering</i> (english language) - JeanMarc FRANSSSEN, Thomas GERNAY	B2	Q1	18	18	-	3

**Professional focus in "urban and environmental engineering" (B2 : 30Cr)**

*Notice* : Registration to this focus only with a file (contact person : Pr. M. PIROTTON). Only students who have acquired a sufficient number of credits in the 'Constructions' field will be selected.

UEEN0001-1	<i>Water and energy in urban environments</i> (english language) -	B2	Q1	30	30	[+]	5
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	Pierre DEWALLEF, Benjamin DEWALS - [2d FW]					
UEEN0002-1	<i>Urban recycling : land and wastes</i> (english language) - Serge BROUYÈRE, Luc COURARD - [10h Labo., 20h Proj., 2d FW]	B2	Q1	20	10	[+] 5
UEEN0003-1	<i>Resilience and constructions in urban areas</i> (english language) - Robert CHARLIER, Thomas GERNAY - [60h Proj., 1d FW]	B2	Q1	12	12	[+] 5
UEEN0004-1	<i>Urban planning and transportation</i> (english language) - Mario COOLS, Jacques TELLER - [1d FW]	B2	Q1	30	30	[+] 5
UEEN0005-1	<i>Urban sociology and co-design</i> (english language) - [20h Proj., 1d FW]	B2	Q1	20	10	[+] 5
UEEN0006-1	<i>UEE project</i> (english language) - Shady ATTIA, Frédéric NGUYEN, Philippe RIGO - [100h Proj., 1d FW]	B2	Q1	-	90	[+] 5

### Research Focus (B2 : 30Cr)

Aimed at students who have taken this focus in 2015-2016.

## Additional ECTS Master in civil engineering (120 ECTS)

### Optional courses (B0 : 60Cr)

Each student's programme will be determined by the jury depending on their prior training. If an applicant does not meet certain prerequisites, his or her programme may include up to 60 additional course credits essentially taken from the list below : (B0 : 60Cr)

MATH0006-3	<i>Introduction to numerical analysis</i> (english language) - Quentin LOUVEAUX	B0	Q1	20	20	- 4
MECA0001-2	<i>Mechanics of materials</i> - JeanPierre JASPART - [2h Labo., 12h Proj.]	B0	Q1	30	28	[+] 5
MECA0011-2	<i>Fluid Mechanics : Basics</i> - Michel PIROTTON - [25h Proj.]	B0	Q2	20	30	[+] 4
LANG0039-2	<i>English 2</i> (english language) - Christine FILOT, ISLV - [20h Proj.]	B0	TA	-	30	[+] 3
MATH0067-1	<i>Introduction to statistics and probability</i> - Mario COOLS, Vincent DENOËL - [15h Proj.]	B0	Q1	20	25	[+] 3
GCIV0184-5	<i>Building materials</i> - Luc COURARD - [0,5d FW, 12h Labo., 12h Proj.]	B0	Q2	36	4	[+] 5
MECA0012-6	<i>Solid mechanics</i> - Laurent DUCHENE - [15h Proj.]	B0	Q2	30	30	[+] 5
GCIV0604-3	<i>Hydraulic</i> - Michel PIROTTON - [1d FW, 15h Proj.]	B0	Q1	25	35	[+] 5
GCIV0603-2	<i>Geotechnics and infrastructure</i> - Robert CHARLIER - [0,5d FW, 2h Labo.]	B0	Q2	26	26	[+] 5
GCIV0608-1	<i>Introduction to Structures engineering</i> - JeanFrançois DEMONCEAU, Vincent DENOËL, JeanMarc FRANSSSEN - [4d FW, 40h Proj.]	B0	Q1	12	12	[+] 5
GEOL0001-1	<i>Geology and Engineering geology</i> - Alain DASSARGUES - Suppl : Philippe ORBAN - [2d FW]	B0	Q2	35	25	[+] 5
GCIV2172-1	<i>Metallic Elements Calculation</i> - JeanPierre JASPART - [1d FW, 10h Proj.]	B0	Q2	30	30	[+] 5
GCIV2173-1	<i>Reinforced concrete</i> - Boyan MIHAYLOV - [1d FW, 10h Proj.]	B0	Q2	30	30	[+] 5

[...] Choose maximum 1 credit to complete the curriculum