Block view of the study programme

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Block 1

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.

Within the framework of their Master in Civil Engineering, all students must follow or validate the 90 credits of joint training (including placement and final year dissertation) and 30 credits from one of the two professional focuses, i.e. 'civil engineering' or 'urban and environmental engineering'.
Ideally, students studying for the master¿s degree will have acquired the competences and knowledge corresponding to the 40 credits of technical courses specific to the field of construction, taught within the framework of the Bachelor in Civil Engineering.

Compulsory courses

GCIV0201-2	*Concretes and new Materials Technologies* - Luc COURARD - [0,5d FW, 6h Labo., 8h Proj.]	Q1	32	20	[+]	**5**
GCIV0643-1	*Prestressed concrete structures and masonry* - Hervé DEGÉE, Boyan MIHAYLOV - [1d FW, 20h Proj.] **Corequisite :** GCIV0607-2 - Analyse des structures I GCIV2173-1 - Béton armé	Q1	26	26	[+]	**5**
GCIV0644-1	*Metallic and Steel-Concrete composite Structures* - JeanFrançois DEMONCEAU, JeanPierre JASPART - [1d FW, 20h Proj.] **Corequisite :** GCIV0607-2 - Analyse des structures I GCIV0185-7 - Méthodes numériques linéaires en génie civil et géologique GCIV2172-1 - Calcul d'éléments métalliques	Q2	35	17	[+]	**5**
GCIV0646-1	*Buildings conception and execution* - JeanFrançois DEMONCEAU, JeanMarc FRANSSEN, Boyan MIHAYLOV - [1d FW]	Q2	40	-	[+]	**5**
GCIV2034-1	*Free surface flow* - Sébastien ERPICUM, Michel PIROTTON - [1d FW, 2h Labo., 10h Proj.] **Corequisite :** GCIV0604-3 - Hydraulique	Q1	27	25	[+]	**5**
GCIV2035-1	*Fluvial hydrodynamics* - Pierre ARCHAMBEAU, Benjamin DEWALS - [30h Proj.] **Corequisite :** GCIV0185-7 - Méthodes numériques linéaires en génie civil et géologique GCIV2034-1 - Ecoulements à surface libre	Q2	26	26	[+]	**5**
GCIV2036-2	*Soils and Rocks mechanics* - Frédéric COLLIN - [1d FW, 5h Proj.]	Q1	26	26	[+]	**5**
GCIV2037-1	*Structures analysis II* - Vincent DENOËL, Philippe RIGO - [15h Proj.] **Corequisite :** GCIV0607-2 - Analyse des structures I	Q2	28	24	[+]	**5**
GCIV0185-7	*Linear numerical methods in Civil and Geological Engineering* - Laurent DUCHENE, Michel PIROTTON - [30h Proj.]	Q1	22	30	[+]	**5**
GCIV0009-1	*Design and execution of hydraulic navigation structures* - Philippe RIGO - [1d FW, 16h Proj.] **Corequisite :** GCIV2034-1 - Ecoulements à surface libre	Q2	30	22	[+]	**5**
GCIV0607-2	*Structures Analysis I* - Vincent DENOËL	Q1	28	24	-	**5**
GCIV2049-1	*Geotechnical Structures Conception and Execution* - Frédéric COLLIN - [20d Proj.] **Corequisite :** GCIV2037-1 - Analyse des structures II GCIV2036-2 - Mécanique des sols et des roches	Q2	17	35	[+]	**5**

GCIV0603-2 - Géotechnique et infrastructures

Block 2

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.

Compulsory courses

ASTG0016-1	*Internship* - Sébastien ERPICUM - [20d FW]	Q2	-	-	[+]	**5**
ATFE0010-1	*Master Thesis (including an introduction to methodology and research)* - Vincent DENOËL - [750h Proj.]	Q2	-	-	[+]	**25**

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

Optional courses

Choose one focus from the following :

Professional focus in "civil engineering"

GCIV2065-1	*Design and execution of dams and water networks* (english language) - Benjamin DEWALS, Sébastien ERPICUM - [1d FW, 12h Proj., 2h Labo.]	Q1	18	18	[+]	**3**
GCIV2174-1	*Road infrastructure conception and execution* - Robert CHARLIER - [2d FW]	Q1	20	10	[+]	**3**
GCIV0642-1	*Bridges Conception and Execution* - Vincent DE VILLE DE GOYET - [40h Proj.]	Q1	-	40	[+]	**3**
PRCO0001-1	*Integrated project* - Robert CHARLIER, Laurent DUCHENE, Boyan MIHAYLOV - [2d FW, 100h Proj.]	Q1	-	90	[+]	**7**
GEST3162-1	*Principles of management* (english language) - Michael GHILISSEN, François PICHAULT	Q1	25	25	-	**5**

Choose courses totalling 9 ECTS from the following :

[...] 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	*Natural and technological risks in civil engineering* (english language) - JeanFrançois DEMONCEAU, Benjamin DEWALS - [10h Proj., 1d FW]	Q1	15	15	[+]	**3**
GCIV2063-1	*Planning buildings, co-ordination and safety on building sites* - Fabian BOUCHER - [1d FW]	Q1	15	15	[+]	**3**
GCIV2066-1	*Fundamentals of transportation : transport planning* (english language) - Mario COOLS	Q1	15	15	-	**3**
GCIV0133-9	*Maintenance, repair and renforcement of constructions* (english language) - Luc COURARD - [1d FW]	Q1	20	20	[+]	**3**
GCIV0165-2	*Timber constructions* (english language) - *Part A* - JeanMarc FRANSSEN - *Part B* - JeanMarc FRANSSEN - [15h Proj.]	Q1	20 -	10 -	- [+]	**3**
GCIV2171-1	*Non linear finite elements* (english language) - Frédéric COLLIN, Vincent DE VILLE DE GOYET - [15h Proj.] **Corequisite :** GCIV0185-7 - Méthodes numériques linéaires en génie civil et géologique	Q1	20	20	[+]	**3**
GCIV2050-2	*Seismic engineering* (english language) - Hervé DEGÉE, Vincent DENOËL, Boyan MIHAYLOV - [15h Proj.]	Q1	15	15	[+]	**3**
GCIV2042-2	*Fire safety engineering* (english language) - JeanMarc FRANSSEN	Q1	18	18	-	**3**

GCIV2182-1	*Offshore Wind Structures* (english language) - Philippe RIGO - [20h Proj.]	Q1	12	-	[+]	**3**
GCIV2183-1	*CFD applied to civil engineering* (english language) - Sébastien ERPICUM - [10h Proj.]	Q1	6	26	[+]	**3**

Professional focus in "urban and environmental engineering"

Notice : Students must submit a file for this focus (contact: jury chair). Only students who have acquired a sufficient number of credits in the field of 'Constructions' will be selected.

UEEN0001-1	*Water and energy in urban environment* (english language) - Pierre DEWALLEF, Benjamin DEWALS - [2d FW]	Q1	26	26	[+]	**5**
UEEN0002-1	*Urban recycling : land and wastes* (english language) - Serge BROUYÈRE, Luc COURARD - [10h Labo., 20h Proj., 2d FW]	Q1	20	10	[+]	**5**
UEEN0003-1	*Resilience and constructions in urban areas* (english language) - Sigrid REITER - [60h Proj., 1d FW]	Q1	12	12	[+]	**5**
UEEN0004-1	*Urban planning and transportation* (english language) - Mario COOLS, Mario COOLS - [1d FW]	Q1	26	26	[+]	**5**
UEEN0005-1	*Urban sociology and co-design* (english language) - Stéphane DAWANS, Catherine ELSEN - [20h Proj., 1d FW]	Q1	20	10	[+]	**2**
UEEN0006-1	*UEE project* (english language) - Shady ATTIA, Frédéric NGUYEN, Philippe RIGO - [100h Proj., 1d FW]	Q1	-	90	[+]	**8**

Bloc d'aménagement du programme de l'année

Additional ECTS Master in civil engineering (120 ECTS)

Optional courses

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 :

MATH0006-3	*Introduction to numerical analysis* (english language) - Quentin LOUVEAUX	Q1	20	20	-	**4**
MECA0001-2	*Mechanics of materials* - JeanPierre JASPART - [2h Labo., 12h Proj.]	Q1	27	25	[+]	**5**
MECA0011-2	*Fluid Mechanics : Basics* - Michel PIROTTON - [25h Proj.]	Q2	20	30	[+]	**4**
LANG0039-2	*English 2, English for Engineering* (english language) - Christine FILOT, ISLV - [20h Proj.]	TA	-	30	[+]	**3**
MATH0067-1	*Introduction to statistics and probability* - Vincent DENOËL - [15h Proj.]	Q1	20	25	[+]	**3**
GCIV0184-5	*Building Materials* - Luc COURARD, Anne HABRAKEN - [0,5d FW, 12h Labo., 12h Proj.]	Q2	36	16	[+]	**5**
MECA0012-6	*Solid mechanics* - Laurent DUCHENE - [15h Proj.]	Q2	26	26	[+]	**5**
GCIV0604-3	*Hydraulic* - Pierre ARCHAMBEAU, Michel PIROTTON - [1d FW, 15h Proj.]	Q1	22	30	[+]	**5**
GCIV0603-2	*Geotechnics and infrastructure* - Robert CHARLIER - [1d FW, 2h Labo.]	Q2	26	26	[+]	**5**
GCIV0608-1	*Introduction to Structures engineering* - JeanFrançois DEMONCEAU, Vincent DENOËL, JeanMarc FRANSSEN - [4d FW, 40h Proj.]	Q1	12	12	[+]	**5**
GEOL0001-1	*Geology and Engineering geology* - Alain DASSARGUES - [2d FW]	Q2	30	22	[+]	**5**
GCIV2172-1	*Metallic Elements Calculation* - JeanPierre JASPART - [1d FW, 10h Proj.]	Q2	26	26	[+]	**5**

GCIV2173-1	*Reinforced concrete* (english language) - Boyan MIHAYLOV - [1d FW, 10h Proj.]	Q2	26	26	[+]	**5**

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