

Studies Plan

Génie civil 2025-26

Block 1

Courses				Master 1					Master 2					Exam Session	Exam	Credit
Lang.	Code	Sect.	Teacher	Specialization	En	L	T	P	I	C	E	L	T	P	I	
E	Computational systems thinking for sustainable eng.									2h	1h		1h	Sum	During the semester	4
F	CIVIL-534	GC	Sonta													
F	Construction contracts and liability									3h				Sum	Written	3
	ENG-300	SIE	Di Cicco Perritaz													
F	Construction contracts and liability													Win	Written	2
	CIVIL-400	GC	Dubey		2h											
F	Environmental impact assesment													Win	Oral	3
	ENG-474	GC	Chopard Devanthery Schmidt		2h	1h										
E	Innovation for construction and the environment													Win	During the semester	3
	CIVIL-424	GC	Terzis		2h	1h										
E	Intercultural presentation skills													Win	During the semester	2
	MGT-469	MTE	Everett		1h	1h										
E	Programming concepts in scientific computing													Win	During the semester	4
	MATH-458	MA	Anciaux		2h	2h										
F	Project management and risk analysis													Win	During the semester	4
	MGT-427	MTE	Wieser		2h				1h							
E	Research skills for engineers													Win	During the semester	2
	CIVIL-465	GC			1h	1h										
F	Risk analysis and management													Win	Oral	2
	CIVIL-438	GC	Defert		2h											

Block 2

Courses			Master 1					Master 2					Exam Session	Exam	Credit		
Lang.	Code	Sect.	Teacher	Specialization	En	L	T	P	I	C	E	L	T	P	I		
E	CE project 1 CIVIL-481	GC	Profs divers							5h				5h	Sum Win	During the semester	8
E	CE project 2 CIVIL-482	GC	Profs divers							5h				5h	Sum Win	During the semester	8
F	ENAC project PENS-490	GC	Profs divers							4h				4h	Sum Win	During the semester	4
	Summer workshop PENS-491	GC	Profs divers							40h				Win		During the semester	4
F	UE génie civil: Advanced Drawing structures CIVIL-475	GC	Baur Fernandez-Ordoñez Guaita		2h	2h								Win		During the semester	4
	HSS : Introduction to project SHS													Win			3

HSS : Project

SHS

Sum

3

Group "Optional courses"

Courses				Master 1					Master 2					Exam Session	Exam	Credit	
Lang.	Code	Sect.	Teacher	Specialization	En	L	T	P	I	C	E	L	T	P	I		
	Advanced composites in engineering structures																
E	CIVIL-443	GC	Vassilopoulos		2h	1h									Win	Oral	3
E	Bridge design																
	CIVIL-478	GC								2h	1h				Sum	During the semester	3
F	City and mobility																
	AR-458	AR	Drevon Kaufmann							2h					Sum	Written	3
	Composites design and innovation																
E	CIVIL-464	GC	Vassilopoulos							2h	1h				Sum	Oral	3
	Computational geomechanics																
E	CIVIL-423	GC			2h	2h									Win	During the semester	4
	Continuum mechanics and applications																
E	CIVIL-425	GC								3h	2h				Sum	Oral	6
E	Dam engineering																
	CIVIL-411	GC	De Cesare Manso		3h										Win	Oral	3
	Decision-aid methodologies in transportation																
E	CIVIL-557	GC	Bierlaire Paschalidis Torres							2h	2h				Sum	During the semester	4
	Deep learning for autonomous vehicles																
E	CIVIL-459	GC	Alahi							2h	4h				Sum	During the semester	6
	Design and construction of roadways																
F	CIVIL-463	GC	Tille		2h	1h									Win	Written	3
	Design of precast concrete structures																
E	CIVIL-414	GC	Fernandez-Ordoñez							1h		2h			Sum	During the semester	3
	Dynamics of structures																
E	CIVIL-468	GC	Lignos Tomic		3h	1h									Win	Written	4
	Energy and comfort in buildings																
E	CIVIL-407	GC	Favero Khovalyg Licina Sonta		2h	1h		2h							Win	During the semester	5
	Energy conversion and renewable energy																
E	ME-409	GM	Maréchal Nguyen		2h	1h		1h							Win	Written	4
E	Energy geostructures																
	CIVIL-444	GC								2h	1h		1h		Sum	Written	4
	Engineering of existing structures																
E	CIVIL-511	GC	Denarié Nussbaumer		3h	1h									Win	Oral	4
	Flood and dam break waves																
F	CIVIL-515	GC	Ancey							2h	1h				Sum	Oral	3
	Fluvial hydraulics and river training works																
F	CIVIL-410	GC	André Arborino De Cesare		2h	1h									Win	Oral	3

E	Fracture of materials MSE-424	MX	Drezet Molinari		2h 2h		Sum	Written	4
E	Fundamentals of traffic operations and control CIVIL-457	GC	Geroliminis	2h 1h	1h		Win	During the semester	4
E	Geomechanics CIVIL-402	GC	Ferrari Laloui	3h 2h			Win	Written	5
E	Geothermal resource development CIVIL-470	GC	Kushnir	2h 1h			Win	During the semester	3
F	Hydrological risks and structures ENV-524	SIE	Ancey	1h 2h			Win	During the semester	3
E	Hydropower schemes and pumped-storage CIVIL-469	GC	De Cesare Manso		2h 2h		Sum	Written	4
E	Indoor air quality and ventilation CIVIL-460	GC	Licina		2h 2h		Sum	During the semester	4
E	Irrigation and drainage engineering ENV-549	SIE	Perona	2h 1h	1h		Win	Oral	4
E	Life cycle assessment in energy systems ENV-510	EL	Margni	2h 1h			Win	During the semester	3
E	Machine learning for predictive maintenance applications CIVIL-426	GC	Fink	2h 2h	2h		Win	During the semester	6
E	Materials and structures CIVIL-532	GC	Denarié	2h 1h			Win	Oral	3
E	Mathematical modelling of behavior MATH-463	MA	Bierlaire	2h 2h			Win	Written	5
F	Mobility engineering CIVIL-451	GC	Tufo	2h 1h			Win	During the semester	3
E	Modelling and optimization of energy systems ME-454	GM	Maréchal	2h 2h			Win	Oral	4
E	Multiscale modelling in mechanics CIVIL-408	GC	Karapiperis	2h 2h			Win	During the semester	4
E	Nonlinear analysis of structures CIVIL-449	GC	Lignos Saloustros	3h 2h			Win	Written	6
E	Optional interdisciplinary project CIVIL-493	GC	Profs divers		4h		4h Sum Win	During the semester	4
E	Quantitative imaging for engineers MICRO-518	MT	Andò		2h 1h		Sum	During the semester	3
E	Railway systems and their transition URB-406	SIE	Kummer	2h 1h			Win	Oral	3
E	Reinforced concrete structures - advanced topics CIVIL-512	GC	Ruggiero		3h 1h		Sum	Written	4

E	River eco-morphodynamics and bioengineering		ENV-418	GC	De Cesare Gostner Perona	2h 2h		Win	During the semester	4
E	Rock mass characterization for engineering design		CIVIL-496	GC	Vacat Violay	2h 1h 1h		Sum	During the semester	4
E	Seismic engineering		CIVIL-522	GC	Lignos Saloustros Tomic	4h 2h		Sum	Written	6
E	Shaping future railway systems		URB-408	SIE	Kummer	2h 1h		Sum	Oral	3
E	Slope stability		CIVIL-530	GC	Ferrari	2h 1h		Sum	Written	3
E	Steel structures, selected topics		CIVIL-526	GC	Nussbaumer	2h 1h		Win	Written	3
E	Structural stability		CIVIL-409	GC	Lignos Sousa	3h 1h		Sum	Written	4
E	Thermodynamics of comfort in buildings		CIVIL-450	GC	Khovalyg	1h 1h 1h		Sum	During the semester	3
E	Timber construction		CIVIL-433	GC	Natterer	2h 1h		Sum	Oral	3
E	Transportation economics		CIVIL-455	GC	Geroliminis Yang de Palma	2h 1h		Sum	During the semester	3
E	Transportation network modeling & analysis		CIVIL-477	GC	Zhang	2h 1h		Sum	Oral	3
E	Underground construction		CIVIL-404	GC	Sandrone	2h 1h		Sum	During the semester	3
E	Urban hydraulic systems		CIVIL-413	GC	Pfister	2h 1h		Sum	Oral	3
F	Urban hydrology		ENV-417	SIE	Rossi	2h 2h		Sum	During the semester	4
E	Water resources engineering and management		CIVIL-466	GC	Bieri Perona Zeimetz	3h 1h 1h		Sum	Written	5

Master project

Courses			Master 1					Master 2					MP Autumn					MP Spring					Exam Session	Exam	Credit
Lang.	Code	Sect.	Teacher	Specialization	C	E	L	T	P	I	C	E	L	T	P	I	C	E	L	T	P	I			
E	Engineering internship credited with Master Project (master in Civil engineering)		CIVIL-597	GC	Profs divers						320h						320h					320h	Sum Win	Term paper	0
	Master project in Civil Engineering		CIVIL-599	GC	Profs divers													900h				900h	Sum Win	Oral	30