

UE code	Year 1 / PGE 1 - Semester 5		Total study hours UE	Study hours	ECTS cr.
UE INTEG	Séminaire d'intégration / Integration Seminar		15		1
UE INTEG	PGE1INTEG	Séminaire d'intégration / Integration Seminar		15,00	1
UE ECD1	Enjeux de la construction durable / Sustainable Construction Challenges		80		5
UE ECD1	PGE1CLIMATE	Climate Change et Projet ingénieur et transitions/Climate change and Engineering Project		30,00	1
UE ECD1	PGE1SOCIO	Enjeux des villes et territoires / Challenges for cities and territories		10,00	1
UE ECD1	PGE1ACTEURS	Acteurs, Enjeux et Projet de maîtrise d'oeuvre / Stakeholders and Challenges of the construction project		30,00	2
UE ECD1	PGE1ECO	Économie de l'entreprise / Business Economics		10,00	1
UE MOD1	Mathématiques et modélisation / Mathematics and Modeling		45		4
	PGE1TECE	Mathématiques TECE - optionnel / Mathematics (Refresher Course) - optional		0,00	
UE MOD1	PGE1MATH1	Mathématiques : Analyse et algèbre / Mathematics: Analysis and Algebra		30,00	2
UE MOD1	PGE1PROG	Programmation numérique - Analyse des données / Digital Programming - Data Analysis		15,00	2
UE MM1	Mécanique et matériaux / Mechanics and Materials		104		8
UE MM1	PGE1SCMATERIAUX	Science des matériaux / Materials Science		20,00	2
UE MM1	PGE1IMC	Ingénierie de matériaux de construction / Construction Materials Engineering		30,00	2
UE MM1	PGE1MECAVIB	Mécanique vibratoire / Vibration Mechanics		20,00	2
UE MM1	PGE1MMC	Mécanique des milieux continus / Continuum Mechanics		34,00	2
UE STC1	Sciences et techniques de la construction / Construction Sciences and Techniques		103		8
UE STC1	PGE1TECHCONCEPT	Conception technique des ouvrages et Eurocodes / Technical Design of Structures and Eurocodes		27,00	2
UE STC1	PGE1VRD	Aménagement et réseaux divers / Planning and networks		23,00	2
UE STC1	PGE1THERMO1	Thermodynamique / Thermodynamics		23,00	2
UE STC1	PGE1ELEC1	Energie des systèmes électriques / Energy of Electrical Systems		30,00	2
UE SK1	Communication et projet professionnel / Communication and Professional Project		53		4
UE SK1	PGE1LEADER1	Leadership & Communication et Portfolio 1		20,00	2
UE SK1	PGECONF	Les rencontres de l'ESTP / ESTP Professional Conferences		3,00	
UE SK1	PGEENGLISH	Anglais / English		30,00	2
	PGEFLE	FLE (international students) - optionnel / French as a Foreign Language (international students) - optional		30,00	
	PGEVRENF	Langue renforcée (Allemand ou Espagnol) - optionnel / Main Foreign Language (German or Spanish) - optional		30,00	
	PGEVRSUP	Langue supplémentaire - optionnel / Additional Foreign Language - optional		16,50	
			400,00		30

UE code	Year 1 / PGE 1 - Semester 6		Total study hours UE	Study hours	ECTS cr.
UE ECD2		Management et innovation / Management and Innovation	60		6
UE ECD2	PGE1COMPTAGENE	Comptabilité générale / General Accounting		16,00	1
UE ECD2	PGEDROITTRAVAIL	Droit du travail / Labour Law		10,00	1
UE ECD2	PGE1ORGACHANTIER	Organisation et pilotage de chantier / Organisation of Construction Sites		20,00	2
UE ECD2	PGE1SST	Santé Sécurité au Travail (SST 1) / Occupational Health and Safety (OHS 1)		8,00	1
UE ECD2	PGE1PJDESIGN	Design Thinking & Innovation		6,00	1
UE MOD2		Mathématiques et modélisation / Mathematics and Modeling	110		7
UE MOD2	PGEN1ANANUM	Analyse numérique / Digital Analysis		30,00	2
UE MOD2	PGE1PJMODEL	Projet de modélisation numérique / Digital Modeling Project		19,00	1
UE MOD2	PGE1MATH2	Probabilités et statistiques / Probability and Statistics		27,00	2
UE MOD2	PGE1TNSI	Traitement numérique du signal / Digital Signal Processing		15,00	1
UE MOD2	PGE1BIM1	Modélisation paramétrique de projet et BIM / Parametric Modeling and BIM		19,00	1
UE MM2		Mécanique et matériaux / Mechanics and Materials	86		6
UE MM2	PGE1MECAFLU	Mécanique des fluides et hydraulique / Fluid Mechanics and Hydraulics		31,00	2
UE MM2	PGE1MECASOL	Mécanique des sols / Soil Mechanics		26,00	2
UE MM2	PGE1BETON	Performance des bétons / Performance of Concrete Materials		13,00	1
UE MM2	PGE1RECHERCHE	Initiation à la Recherche (projet) / Introduction to Research (project)		16,00	1
UE STC2		Sciences et techniques de la construction / Construction Sciences and Techniques	100		7
UE STC2	PGE1RDM	Résistance des matériaux / Strength of Materials		38,00	2
UE STC2	PGETHERMO2	Transmission de la chaleur / Heat Transfer		10,00	1
UE STC2	PGE1TOPO	Topométrie urbaine / Urban Topometry		22,00	2
UE STC2	PGE1ELEC2	Production, transport et distribution de l'énergie électrique / Production, transmission and distribution of electrical energy		22,00	1
UE STC2	PGE1ROAD	Road Innovation		8,00	1
UE SK2		Communication et projet professionnel / Communication and Professional Project	44		4
UE SK2	PGE1LEADER2	Leadership & Communication 2		8,00	1
UE SK2	PGECONF	Les rencontres de l'ESTP / ESTP Professional Conferences		3,00	0
UE SK2	PGE1PFOLIO2	Portfolio Soft Skills 2		3,00	1
UE SK2	PGEENGLISH	Anglais / English		30,00	2
	PGEFLE	<i>FLE (international students) - optionnel / French as a Foreign Language (international students) - optional</i>		30,00	
	PGELVRENF	<i>Langue renforcée (Allemand ou Espagnol) - optionnel / Main Foreign Language (German or Spanish) - optional</i>		30,00	
	PGELVSUP	<i>Langue supplémentaire - optionnel / Additional Foreign Language - optional</i>		16,50	
			400,00		30

UE code	Year 2 / PGE 2 - Semester 7	Total study hours UE	Study hours	ECTS cr.
UE ECD3	Sustainable Construction Challenges	88		5
UE ECD3	Introduction to Urban and Environmental Legislation		14,00	1
UE ECD3	Principles of Environmental Regulation (RE2020)		21,00	1
UE ECD3	Engineering and Research Project 1		35,00	2
UE ECD3	Smart cities: principles and challenges		18,00	1
UE MOD3	Mathematics and Modeling	103		8
UE MOD3	Finite element method (FEM): simulation tools		25,00	2
UE MOD3	Introduction to Geographic Information Systems GIS/MIS		27,00	2
UE MOD3	Digital tools for collaborative projects (BIM)		13,00	1
UE MOD3	Climate engineering		20,00	2
UE MOD3	Life cycle analysis (ACL) of a structure: method and tools		18,00	1
UE MGT1	Project Management and Business	55		4
UE MGT1	Cost Accounting		15,00	1
UE MGT1	Price studies		11,00	1
UE MGT1	Project Management		14,00	1
UE MGT1	Business game		15,00	1
UE STC3	Construction Sciences and Techniques	120		9
UE STC3	Geotechnics 1		25,00	2
UE STC3	Reinforced concrete		25,00	2
UE STC3	Prestressed concrete		16,00	1
UE STC3	Steel construction and other structures		25,00	2
UE STC3	Construction site technology		13,00	1
UE STC3	Acoustics		16,00	1
UE SK3	Communication and Professional Project	34		4
UE SK3	Leadership & Communication 3		8,00	2
UE SK3	ESTP Professional Conferences		3,00	
UE SK3	Internship report (end of 1st year)			
UE SK3	English		23,00	2
	<i>French as a Foreign Language (international students) - optional</i>		20,00	
	<i>Main Foreign Language (German or Spanish) - optional</i>		22,50	
	<i>Additional Foreign Language - optional</i>		16,50	
		400		30

UE code	Year 2 / PGE 2 - Semester 8	Total study hours UE	Study hours	ECTS cr.
UE ECD4	Sustainable Construction Challenges	54		3
UE ECD4	Construction Hackathon		15,00	1
UE ECD4	Construction management and site handover		19,00	1
UE ECD4	Environmental engineering		20,00	1
UE MGT2	Project Management and Business	40		3
UE MGT2	Construction law		11,00	1
UE MGT2	Public and private markets		11,00	1
UE MGT2	Intercultural management		9,00	0,5
UE MGT2	Occupational Health and Safety (OHS 2)		9,00	0,5
UE SK4	Communication and Professional Project	46		4
UE SK4	Leadership & Communication 4 (including portfolio)		13,00	2
UE SK4	ESTP Professional Conferences		3,00	
UE SK4	English		30,00	2
	<i>French as a Foreign Language (international students) - optional</i>			
	<i>Main Foreign Language (German or Spanish) - optional</i>			
	<i>Additional Foreign Language - optional</i>			
UE parcours	Major	260		20
UE parcours	Choose one of the 5 majors: - Major AUM - Urban Environment and Mobility - Major CTD - Sustainable Construction - Major ENR - Construction and Energy transition - Major NUM - Digital Technologies for Construction - Major TPD - Environmental Civil Engineering		260,00	
		400,00		30,00

AUM	Major AUM - Urban Environment and Mobility	260		20
UE AUM ENV	Sustainable and low-carbon urban environment	68		5
UE AUM ENV	Urban hydrology and sanitation		29,00	2
UE AUM ENV	Passive and hybrid techniques applied to buildings		19,00	1
UE AUM ENV	Circular economy in urban planning		10,00	1
UE ECD4	Urban environment		10,00	1
UE AUM MOB	Transport and mobility	51		4
UE AUM MOB	Transport networks and low-carbon mobility		13,00	1
UE AUM MOB	Transport modeling - Steps and uses		21,00	2
UE AUM MOB	Road Design		17,00	1
UE AUM URB	Urban planning and development	81		7
UE AUM URB	Regional planning and mapping		20,50	2
UE AUM URB	Legislative framework for sustainable regional development		10,00	1
UE AUM URB	Qualitative and quantitative urban planning methods		20,50	2
UE AUM URB	Building Diagnosis and renovation		18,00	1
UE AUM URB	Risk management and urban resilience		12,00	1
UE AUM PJ	UE AUM PJ	Engineering and research project 2	60	4

CTD	Major CTD - Sustainable Construction	260		20
UE CTD BAT	Eco-design and structural techniques	60		5
UE CTD BAT	Technical building design		20,00	2
UE CTD BAT	Energy efficiency and building control		20,00	2
UE CTD BAT	Low carbon construction		20,00	1
UE CTD STC	Structures and building techniques	90		6
UE CTD STC	Calculation of strength of materials		30,00	2
UE CTD STC	Reinforced concrete frames		30,00	2
UE CTD STC	Steel frame structures		15,00	1
UE CTD STC	Calculation of soil-structure interactions		15,00	1
UE CTD OUV	Architecture and monitoring	50		5
UE CTD OUV	Architecture, design, project management		20,00	2
UE CTD OUV	Digital technology and organisation of low-carbon worksites		10,00	1
UE CTD OUV	Renovation and refurbishment of the built heritage		20,00	2
UE CTD PJ	UE CTD PJ	Engineering and research project 2	60	4

ENR		Major ENR - Construction and Energy transition	260	20	
UE ENR ELC		Electrical systems and regulation	64	5	
UE TEC RE		Renewable energies	24,00	2	
UE TEC RE		District heating / geothermal energy / biomass power plants	21,50	2	
UE TEC RE		Cogeneration and combined cycles	18,50	1	
UE ENR THE		Thermal and energy systems	71	6	
UE TEC CS		Climate engineering	24,50	2	
UE TEC CS		Life cycle Analysis of the of a structure- 2	16,50	2	
UE TEC CS		Energy simulation	30,00	2	
UE ENR RES		Operability and Mintenance	65	5	
UE TEC OM		Infrastructures regulation and control	25,00	2	
UE TEC OM		Diagnostic and maintenance of infrastructures	21,50	2	
UE TEC OM		Building Management system	18,50	1	
UE ENR PJ	UE ENR PJ	Engineering and research project 2	60	60	4

NUM		Major NUM - Digital Technologies for Constuction	260	260	20
UE NUM1		Data acquisition	90	5	
UE NUM1		Topometry, topographic survey	25,00	1	
UE NUM1		Photogrammetry	28,00	2	
UE NUM1		Remote sensing	19,00	1	
UE NUM1		Topographic and computer calculations	18,00	1	
UE NUM2		Data management and monitoring of facilities	53	5	
UE NUM2		Geographic Information Systems GIS	21,50	2	
UE NUM2		Automation of positioning techniques	11,50	1	
UE NUM2		Techniques for monitoring and maintaining facilities	20,00	2	
UE NUM3		Digital data processing	57	6	
UE NUM3		Computer programming, data and algorithm	19,00	2	
UE NUM3		Data analysis, Big data	19,00	2	
UE NUM3		IoT and Machine learning	19,00	2	
UE NUM PJ	UE NUM PJ	Engineering and research project 2	60	60	4

TPD		Major TPD - Environmental Civil Engineering	260	20	
UE TPD T		Roads, regional planning and environment	56	4	
UE TPD TS		Earthworks and support	28,00	2	
UE TPD TS		Road structures	28,00	2	
UE TPD O		Engineering structures	93	8	
UE TPD IN		Maritime works and pathologies	16,00	1	
UE TPD IN		Ouvrages d'art - kick off	1,00		
UE TPD IN		Calculation of hyperstatic structures	19,00	2	
UE TPD IN		Calculation of reinforced concrete structures	19,00	2	
UE TPD IN		Geotechnics 2	19,00	2	
UE TPD IN		Sizing of structures	19,00	1	
UE TPD S		Networks and Environment	51	4	
UE TPD RE		Transport networks and low-carbon mobility	2,00		
UE TPD RE		Ecology of materials	16,00	1	
UE TPD RE		Water development and environment	18,00	2	
UE TPD RE		Ecology of electircity, Lighting	15,00	1	
UE TPD PJ	UE TPD PJ	Engineering and research project 2	60	60	4

UE code	Year 3 / PGE 3 - Semester 9	Total study hours UE	Study hours	ECTS cr.
UE ECD5	Sustainable Construction Challenges	66,00		6
UE ECD5	Financial management		17,00	2
UE ECD5	Ethics in civil engineering		10,00	1
UE ECD5	Lean management		14,00	1
UE ECD5	Risk prevention management		14,00	1
UE ECD5	Occupational Health and Safety (OHS 3)		11,00	1
UE SK5	Communication and Professional Project	34		4
UE SK5	Leadership & Communication 4 (including portfolio)		13,00	1
UE SK5	ESTP Professional Conferences		3,00	0
UE SK5	Internship report (2nd year)			1
UE SK5	English		18,00	2
	<i>French as a Foreign Language (international students) - optional</i>			
	<i>Main Foreign Language (German or Spanish) - optional</i>			
	<i>Additional Foreign Language - optional</i>			
UE Option	Optional module	300		20
			300,00	
UE Option	One option to choose from: <ul style="list-style-type: none"> - Low-carbon design and construction (Cachan, Dijon) - Construction 4.0 (Troyes) - Real estate development and use (Cachan, Troyes) - Environmental civil engineering (Dijon) - Nuclear civil engineering (Cachan) - Road Infrastructure and Sustainable Development (Cachan) - Infrastructures and Underground Works (Cachan) - Digital Twins and AI (Orléans) - Modelling of complex structures (Cachan) - Energy Production, Transport and Storage, Smart Grid (Cachan) - Renovation and rehabilitation of built heritage (Troyes) - GIS, topography and digital technology (Cachan, Troyes) - Sustainable, low-carbon urban planning (Dijon) 			
		400,00		30,00

UE code	Year 3 / PGE 3 - Semester 10	Total study hours UE	Study hours	ECTS cr.
UE	Engineering Project			30
	6-month internship (written report + oral defense)	200,00	200,00	30
		200,00	200,00	30,00