SCHOOL'S CHART OF COURSES

VISE

School's chart of courses

MSE

				Foundation Year 1 Semester 1											
			TU Constitutif Elements		**Semestriel Time Table Load**					**Credits**		**Coefficients**		**Examination Regime**	
TU	**Teaching Unit**	**TUCE**	**Module**	**TOT**	**L**	**T**	**Labs**	**IC**	**ECUE**	**TU**	**ECUE**	**TU**	**Continuous assessment**	**Mid-Term, quizzes and Final Exam**
111	Mathematics	1111	Calculus 1	56	28	28	0	0	4	8	4	8		X
		1112	Linear Algebra	56	28	28	0	0	4		4			X
112	Physics	1121	Electricity and magnetism	48	20	14	14	0	2	4	2	4		X
		1122	Engineering Mechanics 1	48	20	14	14	0	2		2			X
113	Chemistry	1131	General Chemistry	48	28	10	10	0	4	4	4	4		X
114	Computer science	1141	Algorithmic and programming (Python) I	28	0	0	28	0	2	6	2	6	X	
		1142	ICDL (International Computer Driving License)	20	0	0	20	0	2		2		X	
		1143	Infomaton Technology Security (ITS) workshop	20	0	0	20	0	2		2			X
115	Humanities and Social Sciences	1151	Philosophy of Science	28	28	0	0	0	2	4	2	4		X
		1152	Economics and Finance for Engineers	28	28	0	0	0	2		2			X
116	Languages	1 161	French DELF Prof (A1, A2)	28	0	28	0	0	2	4	2		X	
		1162	English1	28	0	28	0	0	2		2		X	
	Total			434	180	150	106	0	30	30	30	30		

MSE

TU	Teaching Unit	TUCE	Module	TOT	L	T	Labs	IC	ECUE	TU	ECUE	TU	Continuous assessment	Mid-Term, quizzes and Final Exam
			Foundation Year 1 Semester 2											
			TU Constitutif Elements	**Semestriel Time Table Load**					**Credits**		**Coefficients**		**Examination Regime**	
121	Mathematics	1211	Calculus II	56	28	28	0	0	4	8	4	8		X
		1212	Probability and Statistics	56	28	28	0	0	4		4			X
122	Physics	1221	Engineering Mechanics 2	42	20	12	10	0	2	6	2	6		X
		1222	Optical Enqineering	42	20	12	10	0	2		2			X
		1223	Engineering thermodynamics	32	20	12	0	0	2		2			X
123	Chemistry	1231	Organic Chemistry	56	28	28	0	0	3	3	3	3		X
124	Computer science	1241	Algorithm and programming with Python II	28	0	0	28	0	2	4	2	4	X	
		1242	Supervised personal project (ICPL/Python)	28	0	0	28		2		2		X	
125	Humanities, and Social Sciences	1251	Sociology	28	28	0	0	0	3	3	3	3		X
126	Languages	1261	French DELF Pro (B1, B2)	28	0	28	0	0	3	6	3	6	X	
		1262	English 2	28	0	28	0	0	3		3		X	
	Total			424	172	176	68	0	30	30	30	30		

Foundation Year 2 Semester 3

TU	Teaching Unit	TUCE	Module	TOT	L	T	Labs	IC	ECUE	TU	ECUE	TU	Continuous assessment	Mid-Term, quives and Final Exam
211	Mathematics	2111	Applied mathematics	56	28	28	0	0	4	4	4	4		X
212	Engineering tool	2 121	Geotechnical Engineering	42	20	12	10	0	2		2			X
		2122	Geographic infomation systems (GIS)	42	20	12	10	0	2	4	2	4		X
213	Chemistry	2131	Mineralogy and Petrology	40	20	0	20	0	4	4	4	4		X
214	Computer science	2141	Data mining	20	0	0	20	0	2		2		X	
		2142	Excel advanced skills	20	0	0	20	0	2	6	2	6	X	
		2143	Proqraminq C	28	0	0	28	0	2		2		X	
215	Humanities, and Social Sciences	2151	Environmental Sociology	28	28	0	0	0	3		3			X
		2152	Principles of Management	28	28	0	0	0	3	6	3	6		X
216	SOft Skills	2161	Infomation systems : Aqile Method	28	0	28	0	0	3		3		X	
		2162	Geotechnical	28	0	28	0	0	3	6	3	6	X	
Total				360	144	108	108	0	30	30	30	30		

TU	Teaching Unit	TUCE	TU Constitutif Elements Module	Semestriel Time Table Load TOT	L	T	Labs	IC	Credits ECUE	TU	Coefficients ECUE	TU	Examination Regime Continuous assessment	Mid-Term, quizzes and Final Exam
				Ecological Engineering Foundation Year 2 Semester 4										
221	Engineering tool	2211	Measurements and instrumentation	56	28	28	0	0	4	4	4	4		X
222	Chemistry	2221	Electrochemistry	42	20	12	10	0	3	6	3	6		X
		2222	Analytical Chemistry	42	20	12	10	0	3		3			X
223	Computer science	2231	Introduction Matlab	20	0	0	20	0	3	6	3	6	X	
		2232	Introducton to R for data analysis	20	0	0	20	0	3		3		X	
224	Life and environmental sciences	2241	Animal Biology	40	20	10	10	0	2	8	2	8		X
		2242	Plant Biology	40	20	10	10	0	2		2			X
		2243	General Ecology	40	20	10	10	0	2		2			X
		2244	Cell Biology	40	20	10	10	0	2		2			X
225	Humanities, and Social Sciences	2251	Legal Aspects in Environmental Sciences	28	0	28	0	0	3	6	3	6		X
		2252	English ESP 2	28	0	28	0	0	3		3		X	
Total				396	148	148	100	0	30	30	30	30		

School's chart of courses

MSE

			TU Constitutif Elements	Semestriel Time Table Load					Credits		Coefficients		Examination Regime	
TU	Teaching Unit	TUCE	Module	TOT	L	T	Labs	IC	ECUE	TU	ECUE	TU	Continuous assessment	Mid-Term, quizzes and Final Exam
311	Engineering tool	3111	Statistical Methods for Environmental Scientists and Managers	42	20	12	10	0	3	6	3	6		X
		3112	Database management System	42	20	0	22	0	3		3		X	
312	Processes and control	3121	Computer Algorithms in Systems Engineering	20	0	0	20	0	3	6	3	6	X	
		3 122	Automatic Control Systems Robotics & Automation	42	10	10	22	0	3		3			X
313	Biological and chemical sciences	3 131	Biodiversité and Ecosystem Services	40	20	10	10	0	2	6	2	6		X
		3131	Biochemistry	40	20	10	10	0	2		2			X
		3133	General Microbiology	40	20	10	10	0	2		2			X
314	Process Engineering	3141	Process Engineering Principles 1	42	20	12	10	0	3	6	3	6		X
		3142	Process Engineering Principles 2	42	20	12	10	0	3		3			X
315	Human Sciences and soft skills	3151	Ethnoecology and conservaton	28	28	0	0	0	3	6	3	6		X
		3152	Socio-cultural Project (SCP)	28	0	28	0	0	3		3		X	
Total				406	178	104	124	0	30	30	30	30		

Ecological Engineering Foundation Year 3
Semester 5

				Ecological Engineering Third Year Semester 6										
			TU Constitutif Elements	**Semestnel Time Table Load**					**Credits**		**Coefficients**		**Examination Regime**	
TU	**Teaching Unit**	**TUCE**	**Module**	**TOT**	**L**	**T**	**Labs**	**IC**	**ECUE**	**TU**	**ECUE**	**TU**	**Continuous assessment**	**Mid•Term, quizzes and Final Exam**
321	Engineering tool	3211	Operations Research Models in Engineening	40	20	20	0	0	3	6	3	6		X
		3212	Experimental design	40	20	20	0	0	3		3			X
322	Biological sciences	3221	General toxicoloqy	40	20	10	10	0	2	6	2	6		X
		3222	Enzymology	40	20	10	10	0	2		2			X
		3223	Molecular Biology	40	20	10	10	0	2		2			X
323	Environmental engineering	3231	Waste management 1	42	20	12	10	0	3	6	3	6		X
		3232	Environmental Biotechnology	42	20	12	10	0	3		3			X
324	Humanities, and Social Sciences	3241	Social and Sustainable Innovation Driven by the Sustainable Development Goals	28	20	8	0	0	3	3	3	3		X
325	Soft skills	3251	Technical Communication	28	0	28	0	0	3	6	3	6	X	
		3252	Business English	28	0	28	0	0	3		3		X	
326	Project	3261	Capstone Project	28	0	28	0	0	3	3	3	3		X
	Total			396	160	186	50	0	30	30	30	30		

| Ecological Engineering Fourth Year Semester 7 | | | | | | | | | | | | | |
| | | | TU Constitutif Elements | Semestriel Time Table Load | | | | | Credits | | Coefficients | | Examination Regime | |
TU	Teaching Unit	TUCE	Module	TOT	L	T	Labs	IC	ECUE	TU	ECUE	TU	Continuous assessment	Mid•Term, quizzes and Final Exam
411	Environmental sciences	4111	Waste management 2	40	20	20	0	0	3	6	3	6		X
		4112	Global Climate Change : Science Impacts, Solutons	40	20	20	0	0	3		3			X
412	Biological sciences and biotechnology	4121	Genetics	48	20	20	8	0	3	6		6		X
		4122	Plant Biotechnology	48	20	20	8	0	3					X
413	Engineer sciences	4131	Biocatalysis engineering	48	20	20	8	0	2	6	2	6		X
		4132	Bioreactors engineering	48	20	20	8	0	2		2			X
		4133	Extraction and purification of molecules	48	20	20	B	0	2		2			X
414	Languages	4 141	French	28	0	28	0	0	3	6	3	6	X	
		4142	Geman 1 or Italian 1	28	0	28	0	0	3		3		X	
415	Business skills	4 151	Management and Governance of Ecosystem Services	28	28	0	0	0	3	6	3	6		X
		4152	Environmental Entrepreneurship	28	28	0	0	0	3		3			X
Total				432	196	196	40	0	30	30	30	30		

MSE

			TU Constitutif Elements	Semestriel Time Table Load					Credits		Coefficients		Examination Regime	
TU	Teaching Unit	TUCE	Module	TOT	L	T	Labs	IC	ECUE	TU	ECUE	TU	Continuous assessment	Mid-Term, quizzes and Final Exam
421	Engineering tool	4211	Environmental Bioscience	40	20	10	10	0	3	6	3	6		X
		4212	Bioprocess optimization and simulation	40	20	0	20	0	3		3			X
422	Environmental Engineering	4221	Advanced Environmental Microbiology	40	20	10	10	0	3	6	3	6		X
		4222	Water and Wastewater treatment engineering	40	20	10	10	0	3		3			X
423	Sustainable development	4231	Bioresources for a Sustainable Future	30	20	10	0	0	3	6	3	6		X
		4232	Sustainability-Driven Innovation	30	20	10	0	0	3		3			X
424	Soft skills and languages	4241	Soft skills 1	28	0	28	0	0	2	6	2	6	X	
		4242	Geman 2 or Italian 2	28	0	28	0	0	2		2		X	
		4243	English for Certificaton (TOEIC Basic)	28	0	28	0	0	2		2		X	
425	Business skills	4251	Business intelligence	40	20	20	0	0	2	6	2	6		X
		4252	Design thinking	40	20	20	0	0	2		2			X
		4253	Project Management	28	0	28	0	0	2		2		X	
Total				412	160	202	50	0	30	30	30	30		

MSE

				Ecological Engineering Fifth Year Semester 9										
			TU Constitutif Elements	Semestriel Time Table Load					Credits		Coefficients		Examination Regime	
TU	Teaching Unit	TUCE	Module	TOT	L	T	Labs	IC	ECUE	TU	ECUE	TU	Continuous assessment	Mid-Term, quizzes and Final Exam
511	Ecological Engineering	5111	Bioenergy	40	20	10	10	0	3	6	3	6		X
		5112	Ecosystems management	30	20	10	0	0	3		3			X
512	Environmental sciences	5121	Ecotoxicology and risk assessment	40	20	10	10	0	2	6		6		X
		5122	Life cycle analysis	30	10	20	0	0	2		2			X
		5123	Environmental Impact Assessment	30	10	20	0	0	2		2			X
513	Sustainable development	5131	Green buildings concept and design	28	20	0	8	0	3	6	3	6		X
		5132	Sustainable urban planning	28	20	0	8	0	3		3			X
514	Soft skills	5141	Writing and presentation techniques	28	0	28	0	0	3	6	3	6	X	
		5142	Soft skills 2	28	0	28	0	0	3		3		X	
515	Humanities, and Social Sciences	5151	Environmental Ethics and law	28	28	0	0	0	3	6	3	6		X
		5152	Corporate social responsibility (RSE)	28	28	0	0	0	3		3			X
Total				338	176	126	36	0	30	30	30	30		

MSE

Ecological Engineering Fifth Year Semester 10				
TU	Teaching Unit	TUCE	Module	Credits
521	Project	5211	Final Year Project (FYP)	30