

GEOMATICS ENGINEERING

CHART OF COURSES



Semester 1				
Constitutive elements of TU				Teaching hours per semester
UE	Teaching unit	UC	Module	TOT
111	Mathematics	1111	Calculus I	45,00
		1112	Linear Algebra I	45,00
112	Physics	1121	Electricity and magnetism	45,00
		1122	Engineering Mechanics I	45,00
113	Chemistry	1131	General Chemistry	45,00
114	Computer science	1141	Algorithmic and programming with Python I	45,00
		1142	ICDL (International Computer Driving License)	22,50
		1143	Infomation Technology Security (ITS) workshop	22,50
115	Humanities and Social Sciences	1151	Philosophy of Science	22,50
		1152	Economics and Finance for Engineers	22,50
116	Languages	1161	French DELF	22,50
		1162	English I	22,50
Total				405,00

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Semester 2				
Constitutive elements of TU				Teaching hours per semester
UE	Teaching unit	UC	Module	TOT
121	Mathematics	1211	Calculus II	45,00
		1212	Linear Algebra II	45,00
122	Physics	1221	Engineering Mechanics II	45,00
		1222	Optical Engineering	45,00
		1223	Engineering thermodynamics	45,00
123	Chemistry	1231	Organic Chemistry	45,00
124	Computer science	1241	Algorithm and programming with Python II	45,00
		1242	Supervised personal project (ICDL/Python)	22,50
125	Humanities, and Social Sciences	1251	Sociology	22,50
126	Languages	1261	French	22,50
		1262	English 2	22,50
Total				405,00

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Semester 3				
Constitutive elements of TU				Teaching hours per semester
UE	Teaching unit	UC	Module	TOT
211	Mathematics and physics	2111	Calculus III	45,00
		2112	Physics Waves	45,00
212	Engineering tool	2121	Geotechnical Engineering	45,00
		2122	Geographic information systems (GIS)	45,00
213	Chemistry	2131	Mineralogy and Petrology	45,00
214	Computer science	2141	Database Design	45,00
		2142	Excel advanced skills	22,50
		2143	Object Oriented Programming	45,00
215	Humanities, and Social Sciences	2151	Environmental Sociology	22,50
		2152	Principles of Management	22,50
216	Languages	2161	English ESP1	22,50
Total				405,00

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Geomatic Engineering Semester 4				
Constitutive elements of TU				Teaching hours per semester
UE	Teaching unit	UC	Module	TOT
221	Engineering tool	2211	Measurements and instrumentation	45,00
		2212	Signal Processing	45,00
222	Mathematics	2222	Probability and statistics	45,00
223	Database	2231	Data Base (Language & Modeling)	45,00
224	Programming language	2241	Introduction to R for data analysis	45,00
		2242	Programming project C++	22,50
225	Geography and History	2251	Geography	45,00
		2252	History	22,50
		2253	Geodsy and Projection	45,00
226	Humanities, and Social Sciences	2261	Legal Aspects in Environmental Sciences	22,50
		2262	English ESP 2	22,50
Total				405,00

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Geomatic Engineering Semester 5				
Constitutive elements of TU				Teaching hours per semester
UE	Teaching unit	UC	Module	TOT
311	Engineering Tool	3111	Sensors and acquisition	45,00
		3112	Remote sensing	45,00
312	Topography and Cartography	3121	Topography and GNSS	45,00
		3122	Cartographic semiology	45,00
313	Web multimedia	3131	Web and multimedia programming / webmapping Information	45,00
314	Software engineering	3141	Information systems : Agile Method	45,00
		3142	Object-oriented analysis and design (Java)	45,00
315	Human Sciences and earth sciences	3152	Socio-cultural Project (SCP)	45,00
316	Languages	3161	English for Certification (TOEIC Basic)	22,50
317	Project	3271	Capstone Project	22,50
Total				405,00

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Geomatic Engineering Semester 6				
Constitutive elements of TU				Teaching hours per semester
UE	Teaching unit	UC	Module	TOT
321	Engineering Tool	3211	Operations Research Models in Engineering	45,00
		3212	image processing	45,00
322	Advanced and web GIS	3221	GeoWeb	45,00
		3222	Programming of GIS	45,00
323	Urban Planning	3231	Urban planning and management infrastructure	45,00
324	Programming and project management	3241	Mobile programming	45,00
		3242	Agile project management	45,00
325	Humanities, and Social Sciences	3251	Social and Sustainable Innovation Driven by the Sustainable Development Goals	45,00
326	Soft skills	3261	Technical Communication	22,50
327	Project	3271	Capstone Project	22,50
Total				405,00

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Geomatic Engineering Semester 7				
Constitutive elements of TU				Teaching hours per semester
UE	Teaching unit	UC	Module	TOT
411	Geographic Data Analysis	4111	Advanced Spatial Analysis	45,00
		4112	Geostatistic	22,50
		4113	Multicriterion Analysis	45,00
412	Geomatic	4121	Advanced Geomatics	45,00
413	Artificial Intelligence AI	4121	Artificial Intelligence	45,00
		4122	Machine Learning	45,00
414	Spatial Data base	4131	Datawarehouse	45,00
		4132	Spatial Database Management Systems	45,00
415	Business skills	4151	Management and Governance of Ecosystem Services	22,50
		4152	Environmental Entrepreneurship	22,50
416	Soft skills	4161	Technical Communication	22,50
Total				405,00

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Geomatic Engineering Semester 8				
Constitutive elements of TU				Teaching hours per semester
UE	Teaching unit	UC	Module	TOT
421	Geomatic intelligence and sustainable developement	4211	Geomatcs and Sustainable Development	45,00
		4212	Geo Intelligence	45,00
422	3D Image processing	4221	Stochastic image modeling	45,00
		4222	3D imagery	45,00
423	Data mining and project management	4231	Data mining	45,00
		4232	Software Engineering	45,00
424	Soft skills and languages	4241	Digital skills	22,50
		4242	English for Certificaton (TOEIC Basic)	22,50
425	Business skills	4251	Business intelligence	22,50
		4252	Design thinking	45,00
		4253	Capstone Project	22,50
Total				405,00

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Geomatic Engineering Semester 9				
Constitutive elements of TU				Teaching hours per semester
UE	Teaching unit	UC	Module	TOT
511	Geomatic application, technology and research	5111	GIS Applications	45,00
		51112	Research on Geomatics	45,00
512	Technological & spatio-temporal analytics	5121	Technological watch	45,00
		5122	Spatio-temporal analytics	45,00
513	Data Science &Big data	5131	Big Data and Cloud	45,00
		5132	Data science	45,00
		5133	Internet Of Things (IoT)	45,00
514	Humanities, and Social Sciences	5141	Enviromental Ethics and law	22,50
		5142	Corporate social responsibility (RSE)	22,50
515	Soft skills	5151	Writing and presentation techniques	22,50
		5152	Soft skills	22,50
Total				405,00

Geomatic Engineering Semester 10		
TU	Teaching Unit	TUCE
521	Project	5211