

**Semester 1 Master: Roads and engineering structures**

Teaching unit	Materials	Credits	Coefficient	Hourly volume weekly			Semester Hours (15 weeks)	Complementary consulting work (15 weeks)	Evaluation	
	Title			Courses	TD	TP			Continuous control	Review
UE Fondamentale Code: UEF 1.1.1 Credits: 8 Coefficients: 4	Elasticity theory	4	2	1h30	1h30		45h00	55h00	40%	60%
	Structural dynamics	4	2	1h30	1h30		45h00	55h00	40%	60%
UE Fondamentale Code: UEF 1.1.2 Credits: 10 Coefficients: 5	Bridge sizing	6	3	3h00	1h30		67h30	82h30	40%	60%
	Road sizing	4	2	1h30	1h30		45h00	55h00	40%	60%
UE Méthodologique Code: UEM 1.1 Credits: 9 Coefficients: 5	Reinforced Concrete Structures Project	5	3	1h30	1h30	1h00	60h00	65h00	40%	60%
	TP Programming	2	1			1h30	22h30	27h30	100%	
	TP Software Applied to Roads	2	1			1h30	22h30	27h30	100%	
UE Discovery Code: UED 1.1 Credits: 2 Coefficients: 2	<i>Choice of materials</i>	1	1	1h30			22h30	02h30		100%
	<i>Choice of materials</i>	1	1	1h30			22h30	02h30		100%
UE Transversale Code: UET 1.1 Credits: 1 Coefficients: 1	Technical English and terminology	1	1	1h30			22h30	02h30		100%
<b>Total semester 1</b>		<b>30</b>	<b>17</b>	<b>13h30</b>	<b>7h30</b>	<b>4h00</b>	<b>375h00</b>	<b>375h00</b>		

**Semester 2 Master: Roads and engineering**

Teaching unit	Materials	Credits	Coefficient	Hourly volume weekly			Semester Hours (15 weeks)	Complementary consulting work (15 weeks)	Evaluation	
	Title			Courses	TD	TP			Continuous control	Review
UE Fondamentale Code: UEF 1.2.1 Credits: 8 Coefficients: 4	Plasticity Theory	4	2	1h30	1h30		45h00	55h00	40%	60%
	Bridge sizing 2	4	2	1h30	1h30		45h00	55h00	40%	60%
UE Fondamentale Code: UEF 1.2.2 Credits :10 Coefficients: 5	Prestressed concrete	6	3	3h00	1h30		67h30	82h30	40%	60%
	Steel structures	4	2	1h30	1h30		45h00	55h00	40%	60%
EU Methodological Code: UEM 1.2 Credits: 9 Coefficients: 5	Finite element methods	4	2	1h30	1h30		45h00	55h00	40%	60%
	Roads project	3	2	1h30		1h00	37h30	37h30	40%	60%
	TP Geographic Information (G.I.S.)	2	1			1h30	22h30	27h30	100%	
UE Discovery Code: UED 1.2 Credits: 2 Coefficients: 2	<i>Choice of materials</i>	1	1	1h30			22h30	02h30		100%
	<i>Choice of materials</i>	1	1	1h30			22h30	02h30		100%
UE Transversale Code: UET 1.2 Credits: 1 Coefficients: 1	Compliance with standards and rules of ethics and integrity	1	1	1h30			22h30	02h30		100%
<b>Total semester 2</b>		<b>30</b>	<b>17</b>	15h00	7h30	2h30	<b>375h00</b>	<b>375h00</b>		

**Semester 3 Master: Roads and engineering structures**

Teaching unit	Materials	Credits	Coefficient	Hourly volume weekly			Semester Hours (15 weeks)	Complementary work in Consultation (15 weeks)	Evaluation	
	Title			Courses	TD	TP			Continuous control	Review
UE Fondamentale Code: UEF 2.1.1 Credits: 8 Coefficients: 4	Advanced bridge design	4	2	1h30	1h30		45h00	55h00	40%	60%
	Underground structures	4	2	1h30	1h30		45h00	55h00	40%	60%
UE Fondamentale Code: UEF 2.1.2 Credits: 10 Coefficients: 5	Railways	4	2	1h30	1h30		45h00	55h00	40%	60%
	Airfields	4	2	1h30	1h30		45h00	55h00	40%	60%
	Pathology and rehabilitation OA	2	1	1h30			22h30	27h30		100%
EU Methodological Code: UEM 2.1 Credits: 9 Coefficients: 5	Advanced geotechnics	4	2	1h30		1h30	45h00	55h00	40%	60%
	Numerical modeling of bridges	3	2			2h30	37h30	37h30	100%	
	Organization and site visits	2	1			1h30	22h30	27h30	100%	
UE Discovery Code: UED 2.1 Credits: 2 Coefficients: 2	<i>Choice of materials</i>	1	1	1h30			22h30	02h30		100%
	<i>Choice of materials</i>	1	1	1h30			22h30	02h30		100%
UE Transversale Code: UET 2.1 Credits: 1 Coefficients: 1	Documentary research and brief design	1	1	1h30			22h30	02h30		100%
Total semester 3		30	17	13h30	6h00	5h30	375h00	375h00		

**UE Discovery (S1, S2, S3)****UE Discovery (S1, S2 and S3)**

1. Regional planning and infrastructure
2. Hydraulic developments
3. Dams
4. Contracts and legislation
5. Secondary State Bodies
6. Transport economics
7. Earthquake engineering
8. Geology
9. Road geotechnics
10. Risk management
11. General hydraulics
12. Hydrology
13. Project management
14. Rock mechanics
15. Soil mechanics
16. Experimental methods
17. Measurement and quotation
18. Marine structures
19. Pavement pathologies
20. Transport planning and systems
21. Road safety 1
22. Road safety 2
23. Traffic engineering
24. Urban planning
25. Roads and other networks

**Semester 4**

Internship in a company or research laboratory, culminating in a dissertation and oral presentation.

	VHS	Coeff	Credits
Personal work	550	09	18
Internship with a company or a laboratory	100	04	06
Seminars	50	02	03
Other (Management)	50	02	03
Total Semester 4	750	17	30

**This table is given for information only**

**Evaluation of the Master's Final Project**

- Scientific merit (Jury's assessment) /6
- Dissertation (Jury's assessment) /4
- Presentation and response to questions (Jury's assessment) /4
- Framers assessment /3
- Presentation of internship report (Jury's assessment) /3