ENTRY REQUIREMENTS

180 ECTS credits Student intake is composed partly of students who have completed the M1 of the Master’s at Paris-Est Marne-la-Vallée University (UPEM), and partly of lateral admissions in M2 (French and foreign students) composed of students recruited in M2 by the UPEM.

ACQUIRED SKILLS

This master prepares students to perform technical and operational responsibilities thanks to a comprehensive approach to the specific features of construction, maintenance and operation of Civil Engineering works. It specifically teaches students how to use tools involved in the design, calculation, production, construction and maintenance of works. It also teaches management strategies and techniques covering the entire implementation process, including the legal aspects specific to a production site.

YOUR FUTURE CAREER

Business sectors: these professionals work in major civil engineering industrial groups, specialist design offices, technical inspection companies and businesses appointed to supervise construction sites. Types of jobs available: project manager, technical controller, roadside survey engineer, project engineer, works engineer, design engineer, assistant design engineer, structural design engineer, execution engineer, methods engineer. ROME (Jobs and positions operational directory) codification: building and public works engineering and studies (F1106), building control and technical diagnostics (F1103), building and public works construction supervision (F1201).

BENEFITS OF THE PROGRAM

Several drivers have been set up to facilitate the link between the training and the industrial sector, as well as student employment:
- the contributors for this master are mainly part-time lecturers from the professional sector
- meetings are organised every year with human resources managers from major civil engineering groups (Bouygues, Vinci, SNCF) to enable students to make initial contact with the industrialists and make it easier to find internships
- the internship is fully undertaken in a company.
YEAR 1, SEMESTER 1.
Unit 1 Continuum mechanics and tensor calculus (V. Monchiet, J. Guilleminot) (ECTS : 5)
Unit 2 Waves and vibrations (C. Soize, C. Perrot) (ECTS : 6)
Unit 3 Computational methods and finite element method (C. Desceliers) (ECTS : 4)
Unit 4 Behaviour of materials (V. Monchiet, Q.D. To) (ECTS : 6)
Unit 5 Mechanics of Composite Materials (Q.C. He) (ECTS : 3)
Unit 6 Linear elasticity of beams and plates, instability (H. Le Quang, J. Yvonnet) (ECTS : 6)

YEAR 1, SEMESTER 2.
Unit 7 Internship (2 months minimum) (ECTS : 12)
Unit 8 English (ECTS : 3)
Optional units (mechanics pathway):
Unit 9 Elasticity in large deformations (Q.C. He) (ECTS : 4)
Unit 10 Fluid mechanics (D.D To, X. Nicolas) (ECTS : 4)
Unit 11 Mathematical methods for mechanics (Monchiet) (ECTS : 4)
Unit 12 Mechanics and acoustics of porous environments (C. Perrot, J. Guilleminot) (ECTS : 3)
Optional units (civil engineering pathway):
Unit 13 Design and calculation for engineering structures (V. Monchiet, S. Charfi) (ECTS : 6)
Unit 14 Foundations design (Q. Zhu, V. Pensée) (ECTS : 6)
Unit 15 Software tools for the design of buildings (Q.D. To) (ECTS : 3)

YEAR 2, SEMESTER 3.
Unit: 1. Reliability of engineering structures and EuroCodes (A. Mebarki) (ECTS : 2.7) - Reliability of engineering structures and EuroCodes (ECTS : 2.75)
Unit: 2. Reinforced and prestressed concrete engineering structures (J. Waeytens) (ECTS : 5.5) - Reinforced concrete structures (ECTS : 2.75) - Prestressed concrete structures (ECTS : 2.75)
Unit: 3. Metal framework structures, mixed material structures, fire protection engineering - Q.D. To, Q.-Z. Zhu, M. Kengne) (ECTS : 5.5) - Metal framework structures (ECTS : 1.85) - Mixed material structures (ECTS : 2.75) - Fire protection engineering (ECTS : 0.9)
Unit: 4. Maintenance and refurbishment of engineering structures (B. Schwartz) (ECTS : 2.7) - Maintenance and refurbishment of engineering structures (ECTS : 2.75)
Unit: 5. Law and markets in a European context (C. Cordier) (ECTS : 2.7) - Law and markets in a European context (ECTS : 2.75)
Unit: 6. Project management (M. Boisset) (ECTS : 5.5) - Project management 1 (ECTS : 2.75) - Project management 2 (ECTS : 2.75)
Unit: 7. Summary project (S. Charfi) (ECTS : 2.7) - Summary project (ECTS : 2) - Robot training (ECTS : 0.75)
Unit: 8. English (ECTS : 2.5)

YEAR 2, SEMESTER 4.
Unit 9: Internship (ECTS : 30) - Internship (ECTS : 30)