Field: Mathematics and Computer Science

Sector: Mathematics
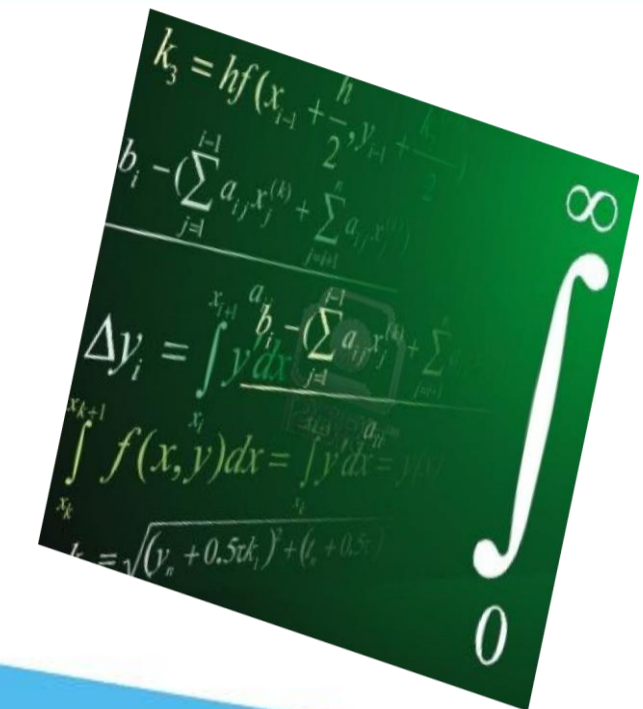
Specialty: Partial Equations and Numerical Analysis

Scholarship opposes:
- France.
- Chine.
- Hungary.
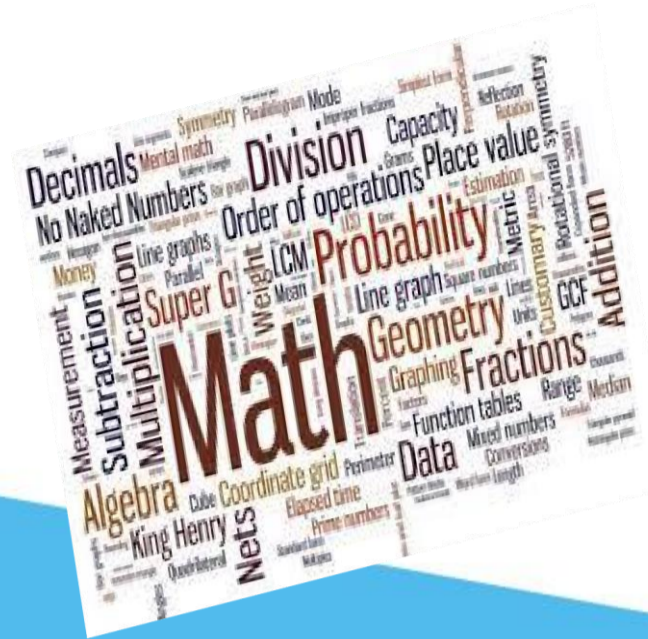
Diploma Master Academic

PROGRAM OF THE TRAINING

Semester 1	Credits	Semester 2	Credits
Fundamental E.U 1: 18 credits		**Fundamental E.U 2: 10 credits**	
• Distributions	6	• Sobolev Space and Variational Methods	4
• Functional Analysis	6		
• Numerical Analysis	6	• Numerical Methods for Integral Equations	6
Methodology E.U: 9 credits		**Fundamental E.U 3: 8 credits**	
• Deep Analysis	4	• Transport equations	4
• Introduction to PDEs	4	• Theory of semi-groups	4
• Mathematical Modeling 1	2		
Transversal E.U: 3 credits		**Methodological E.U: 9 credits**	
• Computer tools	2	• Spectral theory of non-bounded operators	4
• English 1	1	• Differential and integral calculus in standard spaces	4
		• Mathematical modeling 2	1
		Transversal E.U: 3 credits	
		• Basic computer	1
		• English 2	2
Semester 3	**Credits**	**Semester 4**	**Credits**
Fundamental E.U 4: 10 credits		**U.E Fundamental E.U: 18 credits**	
• Element of control theory	5	• Research paper	18
• Conservative and dissipative systems	5		
Fundamental E.U 5: 11 credits		**Methodological E.U: 9 credits**	
• Finite Elements Approximation	6	• Pedagogical learning (Internship in a middle school, secondary school or TP, TD in the first cycle under supervision of the head of the sector) (UEM3)	9
• Spectral Methods for the Approximation of PDEs	5		
Methodology E.U: 9 credits			3
• Stochastic modeling	5		
• Seminar	2	**Transversal E.U**	
• Research Methodology	2	• The University and Socio-Economic Development	
Transversal E.U: 3 credits			
• Psych pedagogy	2		
• Labor low	1		

Targeted business skills

⚜ This master's degree aims to train doctoral students in applied mathematics.

⚜ Students who have obtained a master 2 will be able to join a research center provided that they complete their academic career with an internship in a specific technological field.

⚜ This training also allows professional opportunities for students before following practical internships in institutions.

Objective of the training

This training allows students to acquire specialized knowledge in mathematics, covering most of the necessary scientific background, which allows them to solve problems in physics-mathematics, using analysis tools. Functional, scientific calculation, numerical analysis and mathematical modeling, which will allow them access to a current research horizon. The objectives are:

- Allow students to acquire the tools of mathematical analysis related to the study of physical phenomena and evolutionary equations.

- Master the methods of numerical analysis and computer science allowing the simulation and understanding of complex phenomena.

- Introduce students to scientific research in the fields of applied mathematics.

- Allow students to acquire the scientific skills necessary for their integration into a team or research laboratory or in socio-economic sectors.