

Course title	Dynamic Optimization
Level / Semester	M1 S
Credits	3
Director of Studies	Mme Alziary
Other teaching staff	
Teaching Hours CM	15
Teaching Hours TD	12
Teaching Hours TP	
Course Language	English
Language for TD and/or TP	English

Presentation and organisation of the teaching staff:

Teacher CM and TD : Mme Alziary, office T208

Course description:

Mathematical Preliminaries

- Banach space
- The contraction mapping theorem
- Theorem of maximum

Dynamic Programming

- The principle of optimality
- Optimal plan
- Bounded returns
- Existence of solution for the functional equation
- Properties and regularity of the solution
- Constant returns to scale
- Unbounded returns

The objectives of the course and educational goals:

The objective is to develop the basic tools of recursive analysis in a rigorous way. The course focuses on useful tools for economics areas.

Requirements:

Basic notions on convergence of real sequences and series. Optimization of one variable functions.

Practical arrangements:

Many documents will be available on the course Moodle platform.

References:

Recursive Methods in Economic Dynamics, Nancy L. Stokey and Robert E. Lucas, Jr., With Edward C. Prescott Harvard Press University.