Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
ECON405	Growth Theories	7	3	3	0	3	6

Prerequisites	ECON210
Admission Requirements	ECON210

Language of Instruction	French
Course Type	Elective
Course Level	Bachelor Degree
Objective	This course aims to lecture principal growth models, and is an introduction to the methods for studying simple deterministic dynamical systems.
Content	Introduction to keynesian and neoclassical growth theories.
References	Barro et Sala-i Martin, Economic Growth. Lecaillon, Macro-dynamique : la croissance. Chiang, Fundamental methods of mathematical economics. Sydsaeter, Hammond, Essential mathematics for economic analysis. Sydsaeter, Hammond, Mathematics for economic analysis. Simon, Blume, Mathematical economics.

Theory Topics

Week	Weekly Contents
1	Discrete and continuous growth rate. Fundamental knowledge on simple difference equations and differential equations. Interst rate and optimal timing problems.
2	Harrod model for good market in discrete and continuous time. Existence, uniqueness and stability of equilibrium.
3	Harrod model for factor market, and existence, uniqueness and stability of equilibrium.
4	Neoclassical production function. Concavity and homogeneity. Inada conditions.
5	Neoclassical model. Simultaneous determination of quantities and prices. Existence of equilibrium growth rate.
6	Neoclassical model. Existence, uniqueness and stability of equilibrium.
7	Comparative dynamics. Golden rule path.
8	Midterm.
9	Exogenous technical progress and its classifications.
10	Neoclassical model with technical progress. Existence of equilibrium growth rate. Existence, unicity and stability of equilibrium.
11	Comparative dynamics with technical progress. Stylised facts of Kaldor.
12	Absolute and relative convergence. Neoclassical model reconsidered.
13	The work of Mankiw, Romer, Weil. The critic of Paul Romer and the necessity of endogenous technical progress.
14	Endogenous growth of ancient generation: learning by doing I-II.