

Course Code: ECON-428

Title: Economic Dynamics

Credit Hours: 03

Prerequisite: Advanced Microeconomics, Advanced Macroeconomics and Calculas-II

Course Objectives:

This is an introduction to the analysis of difference and differential equations, including the solution of the simplest linear dynamic systems, the linearization of non-linear systems and

the use of phase diagrams. It aims at providing necessary techniques for graduate students to analyze economic dynamics.

Learning Outcomes:

By the completion of the course, students should be able to:

- Learn the macroeconomic demand supply dynamics
- Keynesian model and how it explains the changes in the various macroeconomic variables in the short run and long run and they interact with each other.

Course Contents:

Introduction	Definitions and concepts, Dynamic models, Deterministic dynamical models, Difference equations, Attractors and repellors, Nonlinear dynamical systems, Continuous models Continuous differential equations.
Demand and Supply Dynamics	The linear cobweb model, Different expectations, The Goodwin model of expectations, Nonlinear cobwebs, Ceilings and floors, Cobwebs in interrelated markets
Simple Keynesian Dynamics	The Keynesian-cross diagram, The dynamic multiplier, A dynamic model with taxes, The multiplier-accelerator model, Introduction of net exports
IS-LM dynamics	The static model, Instantaneous money market adjustment, a continuous IS-LM model A discrete version of the IS-LM model, Interest rate ceiling
Inflation-unemployment dynamics	The Phillips curve, a simple macroeconomic model of inflation, the dynamics of the simple model, Dynamic model with positive inflation, a change in the money supply A change in the natural level of unemployment.
Dynamics of the firm	Introduction, Monopoly and advertising, Advertising model: discrete version, Diffusion models, Static theory of oligopoly, Discrete dynamic model with output adjusting Instantaneously, Dynamic oligopoly with three firms, Partial-adjustment duopoly model.
Fiscal Dynamics	Budgetary concepts, Budget dynamics with no inflation and no monetary financing, Budget dynamics with inflation and money plus bond financing, Budget criteria of the Maastricht Treaty.

Teaching Methodology:

- To deliver lectures on topics included in course outline
- To require each student to solve independent assignments on topics included in the course.

Evaluation Criteria:

Evaluation Method	
Quizzes/Assignments	
Mid-Term Exam	
Final-Term Exam	

Recommended Books:

- Shone. R. (2001). An introduction to economic dynamics. Cambridge University Press.
- Shone. R. (2002). Economic Dynamics: Phase Diagrams and their applications