Mathematical Economics

First Course: static analysis

Chapter 1 Introduction

1-The meaning of mathematical economic

2-variabies and functions

3- Types of functions

4- Economic Models

Part one : static_ Equilibrium Models

Chapter 2 Equilibrium Analysis in economic

1- The meaning of Equilibrium

2- A Linear models

a . Market Demand and supply model

b . National – income Models

3- 2 -3 A non linear partial - Equilibrium model

Chapter 3 Linear Models and Matrix Algebra

1- The Aiqebra of Matrices

2- The Inverse Matrix

3- Application to Market and National- income Models

4- Input –output model

second Course: dynamic analysis

Chapter 4 Comparative – statics and the concept of Derivative

1- Rate of change and the Derivative

2- The Derivative and the slope of a straight line

3- Rules of Differential

4- Economic Applications of a partial Derivatives

5- Maximization and Minimization their application in economics

Chapter 5 optimization subject to contains

1- First – order partial derivatives

2- Second and Higher – order partial derivatives

3- Production Function Analysis

4-**functions of several variables (constrained optimization)**

Chapter 6 Dynamic Inteqration

1- Discrete Dynamic Models

2- Continuous Dynamic Models

3- The cobweb: iterative solutions

4- The cobweb: difference equation solutions