

EC 489
Special Topics in Economics
Macroeconomics Part
(Summer 2004)

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Recommended Textbooks:

- Klein, “*Mathematical Methods for Economics*”, Pearson Education, Second Edition.
- Simon & Blume, “*Mathematics for Economists*”, W.W. Norton & Company, First Edition.
- Burda & Wyplosz, “*Macroeconomics: A European Text*”, Oxford University Press, Second Edition.

Course Outline:

PART I.

A Mathematical Review

- Taylor Expansion
- Young’s Theorem
- Leibniz Rule
- Total Differentials and Derivatives
- Comparative Statics
- Homogeneous Functions
- Matrix Algebra
- Quadratic Forms

PART II.

Optimization

- Unconstrained Optimization
- Constrained Optimization with Equality
- Constrained Optimization with Inequality
- Envelope Theorem
- Calculus of Variations
- An Introduction to Dynamic Programming

PART III.

Difference and Differential Equations

- Solution and Stability
- Eigenvalue Problem
- Systems of Differential Equations

PART IV.

Selected Topics in Macroeconomics