

Economics 712a
Spring 1996

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Office Hours:
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MATHEMATICS FOR ECONOMISTS II

FIRST HALF: DYNAMICAL SYSTEMS

Textbook:

Alpha C. Chiang (1984), *Fundamental Methods of Mathematical Economics*, McGraw-Hill, third edition.

Other references:

William E. Boyce and Richard C. DiPrima (1986), *Elementary Differential Equations and Boundary Value Problems*, Wiley, fourth edition.

Morton I. Kamien and Nancy L. Schwartz (1991), *Dynamic Optimization: The Calculus of Variations and Optimal Control in Economics and Management*, Elsevier Science and North-Holland, second edition.

I. Dynamical systems in continuous time

I.1. Introduction to differential equations

* Chiang, Chapter 13

Kamien and Schwartz, Appendix B, Section 1

Boyce and DiPrima, Chapter 1.

I.2. First-order differential equations

* Chiang, Chapter 14

Kamien and Schwartz, Appendix B, Section 2

Boyce and DiPrima, Chapter 2

I.3. Higher-order differential equations

* Chiang, Chapter 15

Kamien and Schwartz, Appendix B, Sections 3 and 4

Boyce and DiPrima, Chapters 3 and 5

I.4. Systems of differential equations

* Chiang, Chapter 18, Sections 18.2 (pp. 612-614), 18.4, 18.5, 18.6

Kamien and Schwartz, Appendix B, Section 5.

Boyce and DiPrima, Chapters 7 and 9

II. Dynamical systems in discrete time

II.1. First-order difference equations

* Chiang, Chapter 16

II.2. Higher-order difference equations

* Chiang, Chapter 17

II.3. Systems of difference equations

* Chiang, Chapter 18, Sections 18.1 and 18.2