



## MATHEMATICS 403 "TOPICS IN MATHEMATICS FOR ECONOMICS"

**Calendar Description:** H(3-0)

Techniques of integration. Multiple integrals. Analysis of functions. Continuity. Compact sets. Convex sets. Separating hyperplanes. Lower and upper hemi-continuous correspondences. Fixed point theorems. Optimal control.

**Prerequisite:** Mathematics 211 or 221; and Mathematics 253 or 263 or Applied Mathematics 219; or both Economics 387 and 389.

**Suggested Text:** Lecture Notes by Joseph M. Ling

### *Syllabus*

<u>Topics</u>	<u>Number of Hours</u>
Structure of Euclidean spaces	3
Topology of Euclidean spaces	4
Completeness and Sequences	3
Continuity	5
Convex sets and polytopes	5
Separating hyperplanes and supporting hyperplanes	3
Brouwer's Fixed Point Theorem	3
Correspondences, upper and lower hemicontinuity	3
Kakutani's fixed point theorem	2
Review of integration of functions of a single variable	2
Double and triple integrals	3
<b>TOTAL:</b>	<b>36</b>

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