DESCRIPTION: The main purpose of this course is to provide mathematical tools generally used in graduate economic theory and econometrics, as well as other economic courses. It consists of three parts: Matrix Algebra, Static Analysis and Dynamic Analysis. Each part will serve a basic tool for econometrics, micro economic theory and macro economic theory, respectively.

PREREQUISITE: Satisfactory completion of Econ 4808/5808.

TEXTBOOKS:

ORGANIZATION: Two lectures per week. Two midterms and one final will be given. Several problem sets throughout the semester.

GRADING: Each exam will be counted equally.

TENTATIVE COURSE SCHEDULE
1. Matrix Algebra (Chiang, Chapters 4 and 5)
   Basic Operation
   Properties
   Linear Regression Model

2. Static Analysis (Chiang, Chapters 8-12, 19-21)
   Comparative Statics
   Linear Optimization
   Non-linear Optimization

3. Dynamic Analysis (Intrilligator, Chapters 11-14)
   Calculus of Variation
   Optimal Control Problem