DESCRIPTION: 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: Five lectures per week. One midterms and one final will be given. Several problem sets throughout the semester.

GRADING: Two exams 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