ECON 4999L: Foundation Workshop in Economics  
Spring 2017 Syllabus

Department of Economics  
HKUST Business School

Schedule: February 10 – May 5  
Lecture: Friday 4:30 – 5:20 p.m.  
Tutorial: Friday 5:30 – 6:20 p.m.  
Venue: LSK 1007

Course Web Site: https://canvas.ust.hk/

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<th>Instructor:</th>
<th>Teaching Assistant:</th>
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| Professor Xiaoxuan Meng  
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Office Hours: Tuesday 3-5 p.m.  
Office Hours: Thursday 3-5 p.m.

Course Registration  
Interested students please seek approval from the instructor or the Economics Department.

Course Description  
The foundation workshop provides students with basic mathematical tools frequently used in economic analysis. Focus will be placed on single and multivariate calculus, and constrained and unconstrained optimization. The aim of the course is to prepare students for higher level required and elective economics courses.
Learning outcomes
On completion of this course, you will be able to
1. conduct vector operations and present these operation geometrically whenever appropriate
2. use multi-variable calculus to conduct comparative statics in economic problems
3. solve common unconstrained optimization problems such as profit maximization
4. solve common constrained optimization problems such as derivation of consumer demand given utility function and budget constraint
5. solve system of nested optimization problems such as Cournot equilibrium (simultaneous move) and wholesaler-retailer pricing (sequential move)

Format of Delivery
Each class consists of a 50-minutes lecture, followed by a 30-50-minutes hands-on problem-solving workshop.

Required Textbook
There is no required textbook for the course. All materials will be provided by the instructor.

Optional Reference
Fundamental Methods of Mathematical Economics by A.C. Chiang and K. Wainwright (2005), McGraw-Hill HKUST bookstore

Grades
The grades will be based on problem sets (20%) and two quizzes (40% each).

Topics Covered
1. Vector, inner product and economic interpretation
2. Common economic applications of single-variable calculus
3. Comparative-static analysis in multi-variable models
4. Multi-variable unconstrained optimization problem and economic applications
5. Multi-variable constrained optimization problem and economic applications
6. System of nested optimization problems and economic applications