

Econ 765 Preparatory Math for Graduate Students

Micro Part

Instructor: Seungjin Han

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Class schedule:

August 19-23, 26-28, 10-11:20 AM and 2-3:20 PM, KTH 104

Course Website:

https://socialsciences.mcmaster.ca/han/teaching/g_math/g_math.html

Office hours: 4:00 pm - 5:00 pm on Thursdays or by appointment

Objective

Modern microeconomic theory has advanced our understanding of the decentralized market and the welfare economics by applying many mathematical tools. This intensive eight-day course helps the graduate student to expose themselves to the basic mathematical tools that are needed to formalize the economic intuition in graduate microeconomic courses and some basic consumer theory.

It covers techniques needed for comparative statics and optimization techniques such as optimization with equality and/or inequality constraints. It also covers the elements of logic, sets, relation, functions, sequences of real numbers, Euclidean space. After that, it covers consumer theory. Finally, it provides students with some existence theorems that have been extensively used in modern microeconomic theory, such as Weierstrass Existence of Extreme Values, Brouwer Fixed-Point Theorem, Separating Hyperplane Theorem.

Course material

The following notes should be quite useful.

“*Sets, Functions and Euclidean space*” and “*Optimization*” by Seungjin Han

References

Geoffrey A. Jehle and Philip J. Reny, *Advanced Microeconomic Theory*, 2nd Edition, 2000, Addison Wesley,

Knut Sydsaeter, Peter Hammond, Atle Seierstad, and Arne Strom, *Further Mathematics for Economic Analysis*, 2005, Prentice Hall

Alpha C. Chiang and Kevin Wainwright, *Fundamental Methods of Mathematical Economics*, 4th Edition, 2005, McGraw Hill Irwin

Assessment

The assessment of the students will be based on the exam. The exam is sheduled as follows.

September 5, Thursday, 8:30-9:50, DSB B106

The result of the exam will be used in the calculation of the total grade for ECON 721 (Microeconomics I) and it will bear a weight of 10%.