Math Camp

2025

Instructor Info

Shangze Dai & Aiya Faith

Office Hours: By appointment

MCCA 1172

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Course Info

Prereq: Calculus I II

Weekdays (Aug.1st - 14th)

8:00 am – 12:00 pm

MCCA 1151

Lab Info

R Coding in Day 10

TA Info

No TA

Overview

This intensive ten-day Math Camp prepares incoming PhD students for quantitative coursework in the Food and Resource Economics Department at the *University of Florida*. Morning sessions blend concise lectures with guided problem sets; afternoons are reserved for office hours and self-study.

Reading Material

Not required, student may use the following for reference:

Mathematics for Economists (ME): Carl Simon and Lawrence Blume

Advanced Engineering Mathematics (AEM) 10th edition: Kreyszig, Erwin

Optimization in Economic Theory (OET) 3rd edition: Avinash K Dixit

Mathematical Statistics for Applied Econometrics (MSAE) 1st Edition: Charles B Moss

Completion

The camp is non-credit. However, students should attend for better getting used to the intensive first year course work.

Daily Schedule

- Day 1 (A.F.): Linear Algebra – Introduction to linear algebra and systems of linear equations
  Reading: ME: Chap 6 - 7
- Day 2 (A.F.): Matrix Theory – Matrix algebra, the determinant, linear dependence and cramer's rule, introduction to eigenvalues and dynamics
  Reading: ME Chap 8, 9, 11, 23
- Day 3 (S.D.): Multivariable Calculus – Limit, Differentials, Integration, Implicit functions
  Reading: AEM: Chap 9, 10
- Day 4 (S.D.): Static Optimization – Kuhn–Tucker conditions, Convexity and Concavity, Differential Equation
  Reading: OET: Chap 2; AEM: Chap 1
- Day 5 (S.D.): Intro to Dynamic Optimization – Pontryagin Condition, Modern Method, Comparative Static
  Reading: OET: Chap 10
- Day 6 (A.F.): Probability Theory I – Introduction to statistics, probability and econometrics
  Reading: MSAE Chap 2-3
- Day 7 (A.F.): Probability Theory II – Random variables and probability distributions
  Reading: MSAE Chap 3
- Day 8 (S.D.): Statistics I – Large Sample Theory, Point Estimation, Interval Estimation
  Reading: MSAE Chap 6-8
- Day 9 (S.D.): Statistics II – Hypothesis Testing, Linear Regression
  Reading: MSAE Chap 9,11
- Day 10 (A.F.): R Lab – data handling, visualization, and introductory econometrics in R

Policies

- Attendance – please notify an instructor in advance if you must miss a session.
- Academic Integrity – discussion is encouraged; work must be your own.
- Accessibility – students needing accommodations should contact the instructors or UF's Disability Resource Center before the camp begins.

Contact

Questions? Email `shangzedai@ufl.edu`, `faith.aiya@ufl.edu` or see us after class.