This course is designed to cover the mathematical and statistical material required for entry into Econometrics II. Syllabus: Introduction to measure theoretic probability; random variables, distributions and densities; expectations and conditional expectations; families of distributions and transformations; multivariate normal distribution; notion of statistical inference; the methods of estimation and optimality; decision theoretic approach; hypothesis testing; introduction to asymptotic theory; law of large numbers and central limit theorem; asymptotics for maximum likelihood estimation. Note: Students who have preparation equivalent to that of economics Ph.D. students will be admitted with permission of the instructor.

**Semester offered:** Fall