

ECO

Economics

ECO 500: Microeconomics I

The first semester of a one-year course in microeconomic theory. Deals with decision-making of economic agents in different choice environments using the analytical approach of duality theory. Topics include theory of the consumer, theory of the firm, decision-making under risk and uncertainty, intertemporal choice, aggregation, and capital theory.

Prerequisite: Graduate standing in the Economics Department or permission of the Graduate Director.

Fall, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 501: Microeconomics II

A continuation of ECO 500, focusing on theories of equilibrium and market structure. Topics include general competitive equilibrium, imperfect competition and game theory, imperfect information, theory of public goods, and social choice.

Prerequisite: ECO 500, Graduate standing in the Economics Department or permission of the Graduate Director.

Spring, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 510: Macroeconomics I

The first semester of a one-year course in macroeconomic theory. Deals with theories and determinants of income, employment, and inflation. Topics include static equilibrium models, theories of money demand and monetary phenomena, theories of the labor market and unemployment, rational expectations and stabilization policy, consumption, and investment.

Fall, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 511: Macroeconomics II

A continuation of ECO 510, focusing on dynamic models. Topics include models of economic growth, optimal growth and efficiency, overlapping-generations models, rational expectations, and optimal policy.

Prerequisite: ECO 510, Graduate standing in the Economics Department or permission of the Graduate Director.

Spring, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 520: Mathematical Statistics

The first semester of a one-year course in quantitative methods. Statistical methods and their properties of particular usefulness to economists. Topics include probability theory,

univariate and multivariate distributions, limiting distributions, point and interval estimation, hypothesis testing.

Prerequisite: Graduate standing in the Economics Department or permission of the Graduate Director.

Fall, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 521: Econometrics

A continuation of ECO 520. The application of mathematical and statistical methods of economic theory, including the concept of an explanatory economic model, multiple regression, hypothesis testing, simultaneous equations models, and estimating techniques.

Prerequisite: ECO 520, Graduate standing in the Economics Department or permission of the Graduate Director.

Spring, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 522: Applied Econometrics

A continuation of ECO 521. The application and extension of econometric techniques developed in ECO 521. Emphasis on the relationship among economic theory, econometric modeling and estimation, and empirical inference. Computer usage for calculation of estimators. Critical examination of econometric studies in current journals.

Prerequisite: ECO 521, Graduate standing in the Economics Department or permission of the Graduate Director.

Fall, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 531: Introduction to Computational Methods in Economics

A first course in the computational and graphical techniques for finding numerical solutions to a set of economic models (from more elementary models such as Edgeworth Box to a more general competitive equilibrium model to finding the policy function of a dynamic growth model) based on concepts and constructs presented in the 1st year graduate theory courses. Includes the foundations of programming (using a symbolic algebra language), and finding maxima of functions, finding equilibria of markets, and exploring and fitting functions graphically and through finite difference and projection methods.

Emphasis is put on understanding the connections between the concepts, the algebra, the algorithm of the computation and the graphical presentation of economic models and on using the numerical models to perform experiments. Prerequisites: ECO500, ECO590, limited to Economics Department M.A. students Offered

Spring, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 590: Mathematical Foundations of Contemporary Economic Theory

A one-semester course dealing with mathematical concepts and techniques relevant to economic theory. Topics in set theory, topology, linear algebra, and optimization theory. Applications to economic theory developed as time permits.

Prerequisite: Graduate standing in the Economics Department or permission of the Graduate Director.

Fall, 0-3 credits, Letter graded (A, A-, B+, etc.)

ECO 597: Masters Project in Economics

In this required course students will work with an adviser of their choice to write a paper to be submitted by the end of the semester. This research piece will be a well-structured and coherent article on an economic research question in a field of the student's choice, with some elements of originality. The paper cannot be just an extended example that carries out known techniques on a problem that has known answers even if those techniques are complicated. The approval of the master's project advisor and the Graduate Program Director are required to register for this class. Offered fall and

Spring, 0-3 credits, S/U grading

ECO 599: Research in Special Topics

Prerequisite: Graduate standing in the Economics Department or permission of the Graduate Director.

Fall and Spring, 1-12 credits, S/U grading May be repeated for credit.

ECO 604: Game Theory I

Elements of cooperative and non-cooperative games. Matrix games, pure and mixed strategies, and equilibria. Solution concepts such as core, stable sets, and bargaining sets. Voting games, and the Shapley and Banzhaff power indices. This course is offered as both ECO 604 and AMS 552. Prerequisite for ECO 604: Graduate standing in the Economics Department or permission of the Graduate Director.

3 credits, Letter graded (A, A-, B+, etc.)

ECO 605: Game Theory II

Refinements of strategic equilibrium, games with incomplete information, repeated games with and without complete information, and stochastic games. The Shapley value of games with many players, and NTU-values. This course is offered as both ECO 605 and AMS 555.

Prerequisite for AMS 555: AMS 552/ECO 604.

Spring, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 606: Advanced Topics in Strategic Behavior in Economics

An analysis of varying topics in strategic behavior in economics. One or more of the following topics and others will be dealt with each week: repeated games with incomplete information; stochastic games; bounded rationality complexity and strategic entropy; values of non-atomic games; strategic aspects in the telecommunication industry; general equilibrium and financial markets; auction mechanisms; knowledge, common knowledge, and strategic equilibria.

Prerequisites: ECO 501, ECO 604, ECO 605, or permission of instructor, Graduate standing in the Economics Department or permission of the Graduate Director.

Fall or Spring, 3 credits, Letter graded (A, A-, B+, etc.)

May be repeated for credit.

ECO 610: Special Topics: Advanced Macroeconomics Theory

Topics in macroeconomic theory, including microfoundations of macroeconomics, temporary general equilibrium and disequilibrium, monetary theory, equilibrium theory of business cycles, implicit contracts, rational expectations, and econometric implications. Prerequisites: ECO 501, ECO 511, Graduate standing in the Economics Department or permission of the Graduate Director Semesters Offered: Fall and Spring
3 credits, Letter graded (A, A-, B+, etc.)
May be repeated 3 times FOR credit.

ECO 612: Computational Economics and Dynamic Modeling

An analysis of the theory and applications of the dynamic modeling literature using computational methods, and on the methods themselves. Dynamic Modeling and Computational Economics are possibly the fastest growing areas of interest in the profession due to its suitability to model, solve and also estimate realistic decision making problems in most areas of economics.

Prerequisite: Graduate standing in the Economics Department or permission of the Graduate Director
Fall, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 613: Computational Macroeconomics

A concentration on numerical methods commonly used to solve dynamic macroeconomic models. These include methods relying on dynamic programming techniques, linear approximation methods,

and non-linear methods that can be applied to models with distortions and heterogeneous agents. The different methods will be explained and their application to macroeconomics will be illustrated with examples from various areas such as Real Business Cycles, Asset Pricing with Complete and Incomplete Markets, and Recursive Contracts.

Prerequisite: ECO 612, Graduate standing in the Economics department or permission of the Graduate Director

Spring, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 615: Advanced Macroeconomics workshop

This course is designed for PhD students in their 2nd year and above who are thinking about writing a dissertation in macroeconomics. The course will provide the students with research methods for finding a PhD topic as well as for developing their preliminary ideas for their dissertation topic. The course will

involve presentations not only from faculty members but also from students, allowing them to obtain direct feedback and direction for future research from all the faculty members in macroeconomics. The course will also provide students with reviews of the most important literature through discussions and presentations by the faculty members of seminal papers in the cutting edge research areas in macroeconomics. Some examples of these areas are consumer bankruptcy, Housing Markets, Social Security Reform, Health Care reform and Tax reform. The course will deal with stochastic, dynamic general equilibrium models which do not have a close form solution. Students will have to use these models to study their question of interest and the course will also provide them with direction as to which numerical methods are more appropriate to solve their particular problems.

Fall and Spring, 3 credits, S/U grading
May be repeated for credit.

ECO 623: Data Analysis and Economic Applications

Survey of major sources of data in economics and theoretical hypotheses and statistical methods for organizing and analyzing such data. Statistical models for quantitative data as well as qualitative choices are presented. Computer usage is expected.

Prerequisite: ECO 521; Graduate standing in the Economics department or permission of the Graduate Program Director.

Spring, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 629: Studies in Quantitative Methods

Prerequisite: ECO 521; Graduate standing in the Economics department or permission of the Graduate Program Director.

Fall, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 636: Industrial Organization I

Applications of microeconomic theory to the determinants of market structure. Relationships between market structure, firm behavior, and allocational efficiency. Econometric estimation and testing of some hypotheses suggested by the theory.

Prerequisites: ECO 501, ECO 521; Graduate standing in the Economics department or permission of the Graduate Program Director.
Fall, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 637: Industrial Organization II

This course is a continuation of ECO 636. It deals with the same questions and tools as ECO 636, and provides an introduction to antitrust policy and to public policy toward industry, including regulation and deregulation, the design of optimal regulation, and the effectiveness of current regulation.

Prerequisites: ECO 501, ECO 521; Graduate standing in the Economics department or permission of the Graduate Program Director.
Spring, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 640: Labor Economics I

This is the first course in the graduate sequence in labor economic theory and empirical applications. Topics include human capital theory, labor supply, life cycle behaviors, and the behavioral effects of social insurance programs. The emphasis is on up to date treatments of these topics in the literature. Offer

Fall, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 641: Labor Economics II

This is an advanced course in labor economics which continues ECO 640. Topics include both theory and estimation of job search, matching, dynamic discrete and continuous choice models of the labor market. Special emphasis will be given to the role of economic theory in specification and testing econometric models.

Offered in Spring, 3 credits, Letter graded (A, A-, B+, etc.)

ECO 642: Demographic Economics I

This course deals with the economics of the family. It utilizes recently developed techniques in economics and demography to deal with questions concerning marriage,

divorce, fertility, contraception, the intrafamily distribution of resources, and the intergenerational distribution of resources. Students will do original theoretical and empirical research under the professor's supervision. Prerequisite: ECO 501; Graduate standing in the Economics department or permission of the Graduate Program Director. *Spring, 3 credits, Letter graded (A, A-, B+, etc.)*

ECO 643: Demographic Economics II

This course is a continuation of ECO 642. It deals with the same questions and tools as ECO 642, but emphasizes developing economies. The connections between population growth and development are stressed.

3 credits, Letter graded (A, A-, B+, etc.)

ECO 645: Health Economics II

Critical reviews of research in health economics topics of current interest, such as empirical and conceptual models of physician behavior, competition in the pharmaceutical industry, the economic impacts of managed care, and the causes and consequences of unhealthy behaviors. Students will present and critique original research and produce a research paper on a topic of their interest..

3 credits, Letter graded (A, A-, B+, etc.)

ECO 646: Health Economics II

Theoretical and econometric analysis of selected aspects of the health care delivery system, such as the demand for medical services, the supply and distribution of physician services, the utilization of non-physician medical personnel, alternative models of hospital behavior, third-party insurance reimbursement, national health insurance and cost, and price inflation in the hospital and long-term care sectors. Offered as ECO 646 or HPH 664.

3 credits, Letter graded (A, A-, B+, etc.)

ECO 647: Research Methods in Applied Microeconomics

Presentation, discussion and analysis of student and faculty research in the areas of applied microeconomics, labor economics, health economics and industrial organization, as well as applied econometrics. The purpose of the course is to provide skills and feedback to students at various levels in the program that assist them toward the completion of their second year paper, dissertation proposals and thesis. It is a course in research and presentation methods that provides an effective mechanism for learning about current areas of research interest.

*Prerequisite: Graduate standing in the Economics Department or permission of the Graduate Director
Fall or Spring, 0-3 credits, Letter graded (A, A-, B+, etc.)
May be repeated for credit.*

ECO 690: Seminar in Applied Economics

Preparation, presentation, and discussion of student and faculty research in applied economics. Topics covered by student papers are usually related to students' long-term research interests.

*Fall or Spring, 0-6 credits, S/U grading
May be repeated for credit.*

ECO 695: Research Workshop

Designed to direct students to the selection of dissertation topics. Oral and written presentation of student papers with active faculty participation. Several sections may be offered each semester in areas of broad research interest.

*Prerequisite: Graduate standing in the Economics department or permission of the Graduate Program Director and three semesters of coursework in the Ph.D. program.
Fall, 3 credits, S/U grading
May be repeated for credit.*

ECO 698: Practicum in Teaching

Prerequisite: Graduate standing in the Economics department or permission of the Graduate Program Director.

*Spring, 0-3 credits, S/U grading
May be repeated for credit.*

ECO 699: Dissertation Research on Campus

Prerequisite: Have declared thesis advisor in Economics Ph.D. program (G5). Major portion of research must take place on SBU campus, at Cold Spring Harbor, or at the Brookhaven National Lab.

*Fall, Spring, and Summer, 1-9 credits, S/U grading
May be repeated for credit.*

ECO 700: Dissertation Research off Campus - Domestic

Prerequisite: Must be advanced to candidacy (G5). Major portion of research will take place off-campus, but in the United States and/or U.S. provinces. Please note, Brookhaven National Labs and the Cold Spring Harbor Lab are considered on-campus. All international students must enroll in one of the graduate student insurance plans and should be advised by an International Advisor.

Fall, Spring, 0-9 credits, S/U grading

May be repeated for credit.

ECO 701: Dissertation Research off Campus - International

Prerequisite: Must be advanced to candidacy (G5). Major portion of research will take place outside of the United States and/or U.S. provinces. Domestic students have the option of the health plan and may also enroll in MEDEX. International students who are in their home country are not covered by mandatory health plan and must contact the Insurance Office for the insurance charge to be removed. International students who are not in their home country are charged for the mandatory health insurance. If they are to be covered by another insurance plan they must file a waiver be second week of classes. The charge will only be removed if other plan is deemed comparable.

*All international students must received clearance from an International Advisor.
Fall, Spring, 0-9 credits, S/U grading
May be repeated for credit.*

ECO 800: Summer Research

Prerequisite: Pre-approved participation in Economics dept. activity.

*S/U grading
May be repeated for credit.*