

**5500. Seminar in Dance and Theatre Arts.** 3 hours. Rotating topics. Representative topics include dance and theatre arts criticism, playwriting for non-theatrical media, history of theatrical design and classroom performance for teachers. May be repeated for credit.

**5750. Practicum in the Teaching of Theatre Arts.** 3 hours. (3;2) Training in the teaching of dance and theatre arts. Under the supervision of a faculty member the student prepares and presents instructional units, conducts class and laboratory activities, practices interscholastic competition and handles administrative matters peculiar to theatre arts. No more than 3 hours may be applied to a master's degree. Duties performed for a teaching or technical fellowship or assistantship may not earn credit for, or be part of, this course.

**5900-5910. Special Problems.** 1–3 hours each. Problems must be approved by department chair.

**5920-5930. Research Problems in Lieu of Thesis.** 1–3 hours each.

**5950. Master's Thesis.** 3 or 6 hours. To be scheduled only with consent of department. 6 hours credit required. No credit assigned until thesis has been completed and filed with the graduate dean. Continuous enrollment required once work on thesis has begun. May be repeated for credit.

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## Decision Sciences

see Information Technology and Decision Sciences

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## Development, Family Studies and Early Childhood Education

see Counseling, Development and Higher Education

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## Economics

### *Economics, ECON*

**5000. Economic Concepts.** 3 hours. Theory of the firm under different market structures; demand theory, the Keynesian model and the money system.

**5020. Seminar on Economic Data Acquisition and Analysis.** 3 hours. Collection and analysis of economic data. Application of statistical and economic analysis to wide array of data, including monetary, unemployment, GNP, industrial productivity and inflation. Prerequisite(s): ECON 3550 and 3560 or consent of department.

**5030. Microeconomic Analysis.** 3 hours. Theory of the firm relating to production and employment; consumer behavior and related concepts of microeconomic efficiency. Prerequisite(s): ECON 1100-1110 or 5000. Usually offered fall and spring terms/semesters and 5W1 (summer session).

**5040. Macroeconomic Analysis.** 3 hours. National income determination and measurement, macroeconomic stabilization policy and macroeconomic theory. Prerequisite(s): ECON 1100-1110 or 5000. Usually offered fall and spring terms/semesters and 5W2 (summer session).

**5050. Seminar on Contemporary Economic Problems.** 3 hours. Investigation, analysis and discussion of significant problems in contemporary economics. Prerequisite(s): consent of department. May be repeated for credit.

**5070. Comparative Economic Systems.** 3 hours. An examination of the theoretical foundations, structure and performance of various economies of the world. Theoretical coverage emphasizes decision making, price systems, planning, information and motivation, rather than an ideological approach. Topics of modern capitalism are covered, as well as the non-Western economies of the former Soviet Union, Eastern Europe and China. Individual readings and research required. Prerequisite(s): ECON 1100-1110 or consent of department. Students may not receive credit for both ECON 4100 and 5070. Usually offered spring term/semester.

**5090. Seminar on the History of Economic Thought.** 3 hours. The development of economic thought since the Middle Ages. Prerequisite(s): ECON 1100-1110 or consent of department. Students may not receive credit for both ECON 4510 and 5090. Usually offered spring term/semester.

**5100. Seminar on Contemporary Economic Thought.** 3 hours. The development of economic thought since 1900. Prerequisite(s): 6 semester hours of advanced economics.

**5140. Managerial Economics.** 3 hours. Integrates microeconomic theory with accounting, finance, marketing and production management. Incremental reasoning to decision making under uncertainty. Prerequisite(s): ECON 3550 or 5030. Students may not receive credit for both ECON 4140 and 5140. Usually offered spring term/semester.

**5150. Public Economics.** 3 hours. Analysis of theoretical foundations, structure and performance of public sector. Includes issues of public choice theory, market failures, taxing, spending, borrowing and subsidies. Individual readings and research required. Prerequisite(s): ECON 1100-1110 or consent of department. Students may not receive credit for both ECON 4150 and 5150. Usually offered fall and spring terms/semesters and 5W2 (summer session).

**5160. Empirical Public Economics.** 3 hours. Empirical and quantitative analysis of public sector economics. Emphasizes the application of theoretical models in economics to real-world resource allocation decisions, such as taxes and expenditures, at all levels of government using econometric estimation procedures. Prerequisite(s): ECON 5640 or equivalent and ECON 5340 or 5600.

**5170. Seminar in the Economics of Taxation and Tax Policy.** 3 hours. Topics in tax policy, such as comprehensive tax base, consumption taxes, VAT taxes, equity and efficiency issues, tax rules and how they influence investment and consumption decisions. Prerequisite(s): enrollment in MS accounting or consent of instructor. Usually offered spring term/semester and 5W2 (summer session).

**5180. Economics of Health Care.** 3 hours. Application of economic theory and analysis to the financing and delivery of medical care. Emphasis on the use of economic concepts to understand public policy issues in medical care. Students may not receive credit for both ECON 4180 and 5180. Usually offered fall term/semester.

**5210. Seminar on Labor Area Economics.** 3 hours. Individual research in contemporary labor force problems; national and regional labor markets; remedial and curative labor policies. Prerequisite(s): 6 hours of advanced economics or consent of department.

**5250. Advanced Labor Seminar.** 3 hours. Designed to meet the needs of students prepared to do advanced and specialized work in the field of contemporary labor problems, legislation and labor theory. Prerequisite(s): 6 hours of advanced economics and consent of department chair. Usually offered spring term/semester.

**5270. Seminar in Labor and Industrial Relations Problems.** 3 hours. Broad, interdisciplinary aspects of labor and industrial relations problems as currently emphasized by economic, social, political and business conditions. Wide variety of resource personnel from each of the academic disciplines, business, labor and government, and administrators who are experienced specialists in their areas.

**5280. Research Seminar in Labor and Industrial Relations Problems.** 3 hours. Research methodologies and problems in the areas of labor and industrial relations. Practical primary research is required of each student. Prerequisite(s): consent of department.

**5330. Advanced Macroeconomic Theory.** 3 hours. Rigorous theoretical treatment of mainstream theory and method. Theories of national income determination, rational expectations, fiscal and monetary policies, inflexible wages and prices, consumption, investment, the inflation-unemployment tradeoff and business cycles. Prerequisite(s): ECON 3560 or 5040, 4020 or consent of department. Usually offered fall term/semester.

**5340. Advanced Microeconomic Theory.** 3 hours. Microeconomic theory and its applications. Emphasizes the logical structure of microeconomics and the formal specification of microeconomic problems. Special topics may include intertemporal choice, uncertainty and risk analysis; industrial organization and antitrust policy; advanced managerial economics; cost-benefit analysis. Prerequisite(s): ECON 3550 or 5030 and 5600, or consent of department. Usually offered spring term/semester.

**5400. Advanced Monetary Theory and Policy.** 3 hours. Classical and contemporary monetary theory; theoretical and policy problems in the area of money and credit; selected current topics in macroeconomics; applications to both the domestic and international economies. Prerequisite(s): ECON 4020 or equivalent, or consent of department.

**5420. Open Economy Macroeconomics.** 3 hours. Rigorous theoretical and empirical examination of: macroeconomic policy options and their impact in the open economy; international monetary reforms and the impact of balance of payments adjustments under different monetary systems; role of international trade and foreign investment in economic growth. Prerequisite(s): ECON 5330.

**5440. Economics of Natural Resources and Environment.** 3 hours. Natural resource management and use: problems of renewable and non-renewable resources, including scarcity and market responses, role of property rights, externalities, benefit-cost analysis and energy policy with emphasis on Texas. Analysis of environmental problems and policy formulation. Prerequisite(s): ECON 1100-1110 or consent of department. Students may not receive credit for both ECON 4440 and 5440. Usually offered fall term/semester.

**5460. Industrial Organization and Public Policy.** 3 hours. Emphasizes relationships between structure, conduct and performance of industries. Topics include concentration, barriers to entry, pricing, mergers, product differentiation, technical change, antitrust and regulation. Case studies of selected American industries illustrate the theory and public policy implications. Individual readings and research required. Prerequisite(s): ECON 3550 or consent of department. Students may not receive credit for both ECON 4460 and 5460. Usually offered spring term/semester.

**5550. Law and Economics.** 3 hours. Advanced economic analysis of the mutual interaction between legal systems and economic activity. Topics include an introduction to legal systems and institutions, legal analysis, application of economic concepts to various legal doctrines, contracts, torts, criminal law, constitutional law, regulation and antitrust.

Emphasis is placed on using economic theory to develop and test hypotheses regarding the effects of laws on incentives and economic behavior, the allocation of resources and the distribution of income. Prerequisite(s): ECON 5000.

**5600. Mathematical Economics.** 3 hours. Mathematical approaches to economic theory: models of production, consumer choice, markets and pricing; simple macroeconomic models. Prerequisite(s): ECON 3550 or ECON 5030 and MATH 1710 or consent of department.

**5630. Research Methods.** 3 hours. Research methodology for business and the social sciences. Topics include research design; techniques of exploratory data analysis; measures of association; a survey of multivariate factor, discriminant and clustering procedures; and an introduction to linear regression analysis. Prerequisite(s): 3 hours of college statistics or consent of instructor. Offered fall term/semester only.

**5640. Multivariate Regression Analysis.** 3 hours. Focuses on the basic statistical methods employed in linear regression analysis using examples most often encountered in economics, finance and accounting. Topics include: linear and intrinsically linear regression models; estimation under ideal and non-ideal conditions, linear hypothesis testing; multicollinearity, and models with dummy variables. Usually offered fall and spring terms/semesters. Prerequisite(s): MATH 1710 and ECON 5630 or consent of department.

**5645. Empirical Linear Modeling.** 3 hours. Develops the tools necessary to analyze, interpret, and develop empirical applications of econometric estimation procedures. Students explore an assortment of applied problems that are typically encountered in quantitative research with particular attention given to the examination of real world, economic and business-related phenomena. Particular attention is given to developing proficiency in the following areas: organizing and manipulating data, estimating linear regression models, interpreting econometric results and computer output, and working with computer software. Prerequisite(s): ECON 5640.

**5650. Advanced Econometrics.** 3 hours. Focuses on the theoretical foundations of non-linear regression models often encountered in economics, finance and accounting. Topics include the multivariate classical linear regression model; ideal conditions for estimation of the classic linear regression model; linear and non-linear hypothesis testing; the method of maximum likelihood estimation; the consequences of departures from ideal conditions; structural and reduced form equations and models with exogenous regressors; models with qualitative and limited dependent variables; and models with panel data. Usually offered spring term/semester. Prerequisite(s): ECON 5600 and ECON 5640 or consent of department.

**5660. Time Series Econometrics and Forecasting.** 3 hours. Focuses on time series analysis and forecasting methodologies applied to problems typically encountered in economics, finance, and accounting. Topics include AR, MA and ARMA models; dynamic time series models; non-stationarity and tests for unit roots; ARCH and GARCH models; VAR models and impulse response functions; fractional integration and cointegration; and error correction models. Computer applications will be used to reinforce the theoretical models. Usually offered spring term/semester. Prerequisite(s): ECON 5640 or consent of department.

**5670. Topics in Empirical Econometrics.** 3 hours. Analysis, interpretation and development of empirical applications of econometric estimation procedures with emphasis on the examination of real-world economic phenomena and a focus on applied procedures including: dummy variables and structural change, heteroskedasticity, autocorrelation, simultaneous equations and causality, logit, probit, Tobit and panel data. Prerequisite(s): ECON 5650. Usually offered fall term/semester.

**5700. Economic Development.** 3 hours. General analysis and survey of development theories, problems and policies involved with those countries that have not yet attained the level of economic well-being and integration observed in the United States. Individual readings and research required. Prerequisite(s): ECON 1100-1110 or consent of department. Students may not receive credit for both ECON 4600 and 5700. Usually offered spring term/semester.

**5750. Urban and Regional Economics.** 3 hours. Using economic analysis to understand the development of cities and regions and how economic activity in the area is organized. Explores the economics of transportation and urban problems such as poverty, segregation, crime and congestion. Prerequisite(s): ECON 3550. Students may not receive credit for both ECON 4650 and 5750.

**5850. International Trade.** 3 hours. Examines the nature and theoretical foundations of modern trade between nations. Topics to be covered include patterns of international trade and production, welfare implications of trade, impacts of tariffs and quotas, balance of trade and balance of payments issues. Analysis of trade implications of international monetary systems, multinational corporations, exchange rates and economic implications of political action. Individual readings and research required. Prerequisite(s): ECON 1100-1110 or consent of department. Students may not receive credit for both ECON 4850 and 5850. Usually offered fall and spring terms/semesters and 5W1 (summer session).

**5880. Seminar on Current Health Care Economics Research.** 3 hours. Topics include health care reform; problems associated with health insurance markets; alternative health care financing systems in the United States and other countries; health care regulation by the states; universal health care coverage; and the “public goods” nature of health care. Topics are subject to change depending on the current trends in the field and relevancy to students’ interests. The course includes presentations and discussion of the student’s research papers. Prerequisite(s): ECON 4180 or 5180.

**5900-5910. Special Problems.** 1–3 hours each. Open to advanced students capable of doing independent research under the direction of the instructor. To be registered for only on recommendation of the department chair.

**5920-5930. Research Problems in Lieu of Thesis.** 3 hours each. Required of Master of Science candidates majoring in economic research or labor and industrial relations who choose not to take the exit exam (Option 1). A problem in lieu of thesis with an emphasis on empirical studies will be written and submitted. Prerequisite(s): consent of department.

**5950. Master’s Thesis.** 3 or 6 hours. To be scheduled only with consent of department. 6 hours credit required. No credit assigned until thesis has been completed and filed with the graduate dean. Continuous enrollment required once work on thesis has begun. May be repeated for credit. Required for Master of Arts and Master of Science in economics.

**5960-5970. Economics Institute.** 1–6 hours each. For students accepted by the university as participants in special institute courses. May be repeated for credit, but not to exceed a total of 6 hours.

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## Educational Administration and Supervision

see Teacher Education and Administration

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## Educational Curriculum and Instruction

see Teacher Education and Administration

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## Educational Foundations

see Teacher Education and Administration

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## Educational Psychology

see Technology and Cognition

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## Educational Research

see Technology and Cognition

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## Electrical Engineering

### *Electrical Engineering, EENG*

**5310. Control Systems Design.** 3 hours. Control systems analysis, modeling and design constraints, goals, and performance specifications, state-space analysis of linear systems; Root-locus, frequency response and state-space design methods; MATLAB simulations; system stability-introduction to Lyapunov methods; controllability; observability; canonical forms and minimal realizations, fundamentals of feedback control dynamic programming and the Hamilton-Jacobi-Bellman equation; synthesis of optimum state regulatory systems; introduction to the minimum principle, necessary conditions for optimal trajectories; minimum principle for bounded controls, and time-optimal control of linear systems. Prerequisite(s): EENG 2620 or equivalent.

**5520. Digital Integrated Circuit Design.** 3 hours. Thorough investigation of the fundamentals in design and analysis of MOS digital integrated circuits. Topics include MOS transistor, transistor circuit design and analysis, interconnect modeling, dynamic logic circuits, memories and low-power circuit design. Prerequisite(s): EENG 2710, EENG 3520 or equivalent.

**5530. Analog Integrated Circuit Design.** 3 hours. This course thoroughly investigates the fundamentals in design and analysis of analog and mixed-signal integrated circuits. Topics include analog MOS transistor models, current sources and sinks, circuit reference, amplifier, feedback amplifiers, differential amplifiers and operational amplifiers. Prerequisite(s): EENG 3520 or equivalent.

**5610. Digital Signal Processing.** 3 hours. Introduction to modern digital signal processing theory and techniques. Topics covered include discrete time signals and systems, sampling theorem, Z-transform, frequency analysis of signals and systems, discrete Fourier transform, fast Fourier transform algorithms, digital filter design, and multi-rate digital signal processing. Prerequisite(s): EENG 2620 or equivalent.

**5620. Statistical Signal Processing.** 3 hours. Introduction to detection and estimation theories. Vector space, multivariate normal distribution, quadratic forms, sufficiency and minimum variance unbiased estimator, hypothesis testing, Neyman-Pearson detection theory, Bayesian detection theory, maximum-likelihood estimation, Cramer-Rao bound, Bayesian and minimum mean-squared error estimators, Kalman filter, least-squares estimation, singular value decomposition algorithm. Prerequisite(s): EENG 4610 and MATH 6810 or equivalent.