4370. Contemporary Chicana/Chicano Theatre. 3 hours. Reading and critical examination of Chicana/Chicano dramatic literature from the late 1960s to the present day, including discussion of leading Chicana/Chicano playwrights, historical experiences, and the theatre groups that contributed to a professionally-oriented Chicana/Chicano theatre in the U.S. Prerequisite(s): THEA 2440 or consent of department.

4400. Theatre Symposium. 1 hour. Study of and practical involvement with the process of creating and producing theatre as experienced by visiting professionals such as actors, directors, designers, dancers, artistic directors, arts managers, union officials, producers, agents and casting directors.

4460. Play and Film Scriptwriting. 3 hours. Dramatic theory, structure, characterization, dialogue and technical media as used by the playwright or the film scriptwriter in both dramatic and comedic works. Study of the scriptwriting process from proposal to production. Marketing of scripts. Practice in playwriting and film scriptwriting. Prerequisite(s): consent of department. May be repeated twice for credit, but no more than 3 hours may be counted toward a major in theatre arts.

4500. Topics in Dance and Theatre Arts. 3 hours. Representative topics include theatrical unions, dance and theatre criticism, music for non-musical productions, dialects for stage and film performances, and playwriting for non-theatrical media. May be repeated for credit as topics vary.

4610. Effort/Shape. 3 hours. Based on the theories of Laban Movement Analysis, this course is an advanced study of expressive relationships between one's inner intent to move, a responding action and the varied ways our bodies 'shape' to form or create that action. Exploration of how combinations of motion factors affect the visual, functional and expressive composition of movement. Emphasis is on exploring and developing skills that increase one's dynamic range of movement expressiveness essential for the performer. Prerequisite(s): DANC 3030 and 3080, or THEA 1045, 2350, 2351; and senior standing. (Same as DANC 4610.)

4620. Space Harmony. 3 hours. Based on the theories of Laban Movement Analysis, this course investigates harmonic spatial forms and the manner in which they materialize from within the body and extend into space. Subject matter appropriate to choreography, acting/directing and those interested in advanced movement training. Prerequisite(s): DANC 3030 and 3080, or THEA 1045, 2350, 2351; and senior standing. (Same as DANC 4620.)

4900–4910. Special Problems. 1–3 hours each. Problems must be approved by the department chair.

4920. Cooperative Education in Theatre Arts. 3 hours. Supervised work in a job directly related to the student's major, professional field of study or career objective. Prerequisite(s): senior standing; 18 advanced hours of theatre arts and consent of department; student must meet the employer's requirements. May be repeated for credit.

Decision Sciences
see Information Technology and Decision Sciences

Development, Family Studies and Early Childhood Education
see Counseling, Development and Higher Education

Economics

Economics, ECON

1100–1110. Principles of Economics. 3 hours each. Courses provide an introduction to the study of economics and are prerequisites for most upper-level courses. Courses are independent and students have the option to begin the sequence with either ECON 1100 or 1110.


2900. Special Problems. 1–3 hours.

3000. Current Economic Issues. 3 hours. Economic implications of current issues and problems using basic economic reasoning. Issues and problems may include defense, public debt, trade deficit, illegal drugs, education, technology, agriculture, poverty, crime, pollution, taxes, income distribution, recession, government regulation, competition, government spending, inflation, conservation, unemployment, subsidies and health. Prerequisite(s): junior standing. Intended for students not required to take specific economics course(s); may not be substituted for ECON 1100–1110 or 3550–3560. Not open to economics or business majors.

3050. The Economics of Consumption. 3 hours. Consumer decision making and consumer issues in American economy. The application of economic theory to consumer decision making in higher education, net earnings and real income, financial planning, home ownership and personal investment; consumer information; government policies. Prerequisite(s): ECON 1100 and 1110.

3150. Economics of Discrimination. 3 hours. Examines the differences in economic status by gender, race and ethnicity. Intergroup differentials in income, unemployment, wages, education and housing are addressed. Prerequisite(s): ECON 1100.

3250. Industrial Relations. 3 hours. Employer/employee relations in the United States; structure, methods and objectives of labor unions and employer associations in an industrial system and changing institutional pattern. Prerequisite(s): ECON 1100–1110.

3350. Intermediate Micro-Theory. 3 hours. Demand and supply analysis, consumer choice theory, production and cost theory and market equilibrium under different market structures. Prerequisite(s): ECON 1100.

3360. Intermediate Macro-Theory. 3 hours. Factors affecting income level, employment and output; national income concepts and measurements; application of economic policy to current problems. Prerequisite(s): ECON 1100–1110.

4020. Money and Financial Institutions. 3 hours. Nature and functions of money; modern banking institutions and central banks; credit control and monetary stabilization. Prerequisite(s): ECON 1100–1110.

4030. Economic Cycles and Forecasting. 3 hours. Historical survey of economic cycles, theories and stabilization policies. Analysis of major economic aggregates involved in cycle
turning points for economic expansion and contraction. Prerequisite(s): ECON 1100-1110 or consent of department. May not be repeated at the graduate level as ECON 5080.

4100. 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. Prerequisite(s): ECON 1100 or 1110 or consent of department. May not be repeated at the graduate level as ECON 5070.

4140. Managerial Economics. 3 hours. Integrates microeconomic theory with accounting, finance, marketing and production management. Demand and cost estimation and forecasting; pricing; business strategy; case studies. Prerequisite(s): ECON 3550 and MATH 1190 or MATH 1400. May not be repeated at the graduate level as ECON 5140.

4150. Public Economics. 3 hours. Analysis of theoretical foundations, structure and performance of the public sector. Includes issues of public choice theory, market failures, taxing, spending, borrowing and subsidies. Prerequisite(s): ECON 3550 or consent of department. May not be repeated at the graduate level as ECON 5150.

4180. The Economics of Health Care. 3 hours. Application of economic theory to the financing and delivery of medical care. Emphasis on the use of economic concepts to understand health care markets and public policy issues. Prerequisite(s): ECON 3550. May not be repeated at the graduate level as ECON 5180.

4290. Labor Economics. 3 hours. Unemployment, industrial injuries, industrial old age, ill health and substandard employment; remedial program evaluation. Prerequisite(s): ECON 3550.

4410. The 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 3560. May not be repeated at the graduate level as ECON 5420. Usually offered in spring.

4440. 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 3560. May not be repeated at the graduate level as ECON 5420. Usually offered in spring.

4460. 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 theory and public policy. Prerequisite(s): ECON 3550 and MATH 1190 or MATH 1400. May not be repeated at the graduate level as ECON 5440.

4500. The Economics of Sports. 3 hours. Examination of public policy questions about professional and college sports using economic models of sports industries. Topics include theory of the firm, the organization of sports and entertainment industries, sports labor markets, racial discrimination and pricing schemes specific to sports markets. Prerequisite(s): ECON 3550. Offered spring term/semester only.

4510. History of Economic Thought. 3 hours. Economic thought since the Middle Ages. Prerequisite(s): ECON 1100-1110. May not be repeated at the graduate level as ECON 5090.

4550. Law and Economics. 3 hours. Introduction to 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 1100.

4600. Economic Development. 3 hours. General analysis and survey of development theories, and 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. Prerequisite(s): ECON 1100 and 1110, or consent of department. May not be repeated at the graduate level as ECON 5700.

4630. Research Methods for Economists. 3 hours. Research methodology for business and the social sciences. Topics include descriptive statistics, basic probability theory, discrete and continuous probability distributions, hypothesis testing and introductory regression techniques. Emphasis is placed on economics applications. Designed to prepare economics students for econometrics coursework. Prerequisite(s): consent of department. May not be repeated at the graduate level as ECON 5630.

4650. Urban and Regional Economics. 3 hours. Uses economic analysis to understand the development of cities and regions and how economic activity in the areas is organized. Explores the economics of transportation and urban problems such as poverty, segregation, crime and congestion. Prerequisite(s): ECON 3550. May not be repeated at the graduate level as ECON 5750.

4850. International Trade. 3 hours. Examines the nature and theoretical foundations of modern trade between nations. Topics 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. Prerequisite(s): ECON 1100 and 1110, or consent of department. May not be repeated at the graduate level as ECON 5850.

4870. Introduction to Econometrics. 3 hours. Statistical analysis applied to economic problems. Regression analysis using ordinary least squares (OLS), statistical inference and the classical properties of OLS estimators. Prerequisite(s): 6 hours of statistics or consent of department. May not be repeated at the graduate level as ECON 5640.

4875. Empirical Linear Modeling. 3 hours. Develops the tools necessary to analyze, interpret and develop empirical applications of econometric estimation procedures. Exploration of an assortment of applied problems that are typically encountered in quantitative research with particular attention given to the examination of real-world, economic and other business-related phenomena. Particular attention is given to developing proficiency in the following four areas: organizing and manipulating data, estimating linear regression models, interpreting econometric results and computer output, and working with computer software. Prerequisite(s): ECON 4870.
4920. Cooperative Education in Economics. 1–3 hours. Supervised work in a job directly related to the student's major, professional field of study or career objective. Prerequisite(s): 12 semester hours credit in economics; student must meet employer's requirements and have consent of department chair. May be repeated for credit.

Educational Administration and Supervision  
see Graduate Catalog

Educational Curriculum and Instruction  
see Graduate Catalog

Educational Foundations  
see Teacher Education and Administration

Educational Psychology  
see Graduate Catalog

Educational Research  
see Graduate Catalog

Electrical Engineering  

**Electrical Engineering, EENG**

1910. Project I (Learning to Learn). 2 hours. Learning to Learn (1.LL) is based on sound cognitive and pedagogical techniques that improve learning outcomes and make lifelong learning habitual. Students develop an understanding of how engineering and computer science are learned and how we can facilitate and encourage the lifelong learning process. Topics covered include consciousness and self-awareness, metacognition, learning styles, memory, language, reading, writing, problem solving, creativity and biology of learning.

1920. Project II (Engineering Ethics and Professionalism). 2 hours. Engineering is the place where science, business and society intersect, so engineering ethics provides an interesting way to study the relationships among these three. This project course focuses on the profession of engineering, its role in business and society, and the ethical issues that engineers face. Class involves case studies, discussions, group projects, reading, writing response papers and exams; topics include international concerns, risk safety, and environmental issues; employee loyalties and professional responsibility, including codes of conduct.

2610. Circuit Analysis. 3 hours. Introduction to electrical elements, sources and interconnects. Ohm's law, Kirchoff's law, superposition and Thevenin's theorems are introduced. The resistive circuit, OP Amp, RL, RC circuits, Sinusoidal analysis. Prerequisite(s): MATH 1720 and PHYS 2220/2240.

2620. Signals and Systems. 3 hours. Elementary concepts of continuous-time signals and systems. Linear time-invariant (LTI) systems, impulse response, convolution, Fourier series, Fourier transforms and frequency-domain analysis of LTI systems. Laplace transforms, z-transforms and rational function descriptions of LTI systems. Principles of sampling and modulation. Prerequisite(s): EENG 2610 and MATH 3310. (Same as CSCE 3010.)

2710. Digital Logic Design. 3 hours. Digital computers and digital information processing systems; Boolean algebra, principles and methodology of logic design; machine language programming; register transfer logic; microprocessor hardware, software and interfacing; fundamentals of circuits and systems; computer organization and control; memory systems, arithmetic unit design. Prerequisite(s): MATH 1720

2910. Project III (Circuit Design and Analysis Using SPICE). 3 hours. Students are required to use PSPICE to design and analyze basic DC/AC circuits. Prerequisite(s): MATH 1720; EENG 2610 (may be taken concurrently) and MATH 3310 (may be taken concurrently).

2920. Project IV (CAD Tools and Design). 3 hours. Selected design experiments examining programmable logic, VHDL and logic synthesis. Includes a final comprehensive design to accompany and complement the logic design course. Prerequisite(s): EENG 2710 (may be taken concurrently).

3410. Engineering Electromagnetics. 3 hours. Electromagnetic theory as applied to electrical engineering: vector calculus, electrostatics and magnetostatics, Maxwell's equations, including Poynting's theorem and boundary conditions, uniform plane-wave propagation, transmission lines; TEM modes, including treatment of general, lossless line, and pulse propagation; introduction to guided waves; introduction to radiation and scattering concepts. Prerequisite(s): EENG 2710 and PHYS 2220.

3510. Electronics I (Devices and Materials). 3 hours. Introduction to contemporary electronic devices, terminal characteristics of active semiconductor devices, and models of the BJT and MOSFET in cutoff and saturation region are introduced. Incremental and DC models of junction diodes, bipolar transistors (BJTs), and metal-oxide semiconductor field effect transistors (MOSFETs) are studied to design single and multistage amplifiers. Prerequisite(s): EENG 2610.

3520. Electronics II. 3 hours. Concepts, analysis and design of electronic circuits and systems are introduced. Topics include principle of DC biasing, small signal analysis, frequency response, feedback amplifiers, active filters, non-linear op-amp applications and oscillators. Prerequisite(s): EENG 3510.

3710. Computer Organization. 3 hours. Analysis of the design and evaluation of contemporary computer systems to compare the performance of different architectures. Topics include performance metrics, computer arithmetic, pipelining, memory hierarchies, and multiprocessor systems. Prerequisite(s): CSCE 1030, EENG 2710 and EENG 3510. (Same as CSCE 2610.)

3810. Communications Systems. 3 hours. Introduction to the concepts of transmission of information via communication channels. Amplitude and angle modulation for the transmission of continuous-time signals. Analog-to-digital conversion and pulse code modulation. Transmission of digital data. Introduction to random signals and noise and their effects on communication. Optimum detection systems in the presence of noise. Elementary information theory. Overview of various communication technologies such as radio, television, telephone networks, data communications, satellites, optical fiber and cellular radio. Prerequisite(s): EENG 2620, EENG 3510 and MATH 1780. (Same as CSCE 3020.)