

BACT 6544. Viruses as Vectors for Recombinant DNA. 4 hours. Replicative cycle of viruses utilized in recombinant DNA technology. Viruses used to isolate genetic material from other sources and characterization of the recombinant DNA by size, restriction endonuclease mapping and nucleic acid sequencing. One lecture, 6 laboratory hours a week.

BIOL 5123. Biostatistics. 3 hours. Advanced studies in biometric systems, experimental design and data analysis. 3 lecture hours a week. Prerequisite(s): 12 hours of biology and permission of instructor.

BIOL 5653. Human Development. 3 hours. Fundamentals of human embryology, the anatomy of human development and pathology of development. Emphasis on normal and pathological aspects of human gestation. Lectures, films, student reports and tests. 3 lecture hours a week.

BIOL 5703. Radiation, Protection and Dosimetry. 3 hours. Interactions of ionizing radiations and matter, radiation instrumentation, determination of radiation, case and principles of radiation protection. 3 lecture hours a week. Prerequisite(s): one year of physics and permission of instructor.

BIOL 6334. Advanced Cell Biology. 4 hours. Survey of current understanding of biogenesis, architecture and function of cellular organelles. The cell cycle and regulation of cell growth. 4 lecture hours. Prerequisite(s): permission of instructor.

BIOL 6513. Molecular Biology. 3 hours. Survey of current understanding of DNA structure, organization, chromosome replication, gene transcription, ribosome assembly and translation. Emphasis is on molecular processes and their regulation in both prokaryotes and eukaryotes. 3 lecture hours a week. Prerequisite(s): CHEM 5613 and CHEM 5623 or permission of instructor.

ZOOL 5423. Endocrinology. 3 hours. Advanced studies of biology and biochemistry of the glands of internal secretion. 3 lecture hours a week. Prerequisite(s): ZOOL 4243.

Business, College of

Business, Interdepartmental, BUSI

BUSI 5190. Administrative Strategy. 3 hours. Capstone course providing the integration of functional areas of business administration. Requires students to determine policy at the general- or top-management level. Students address strategic organizational problems and the optimization of the total enterprise. Includes the use of lectures, case analysis and special topics. Must be taken in the student's last term/semester of course work.

BUSI 5200. Professional Ethics and Corporate Governance. 3 hours. Examination of professional ethics from both a philosophical and business perspective. Ethical reasoning, moral character and moral decision making provide a framework for examining the importance of ethics in an individual's personal life and professional career. Exploration of the concept of corporate governance and the direction business entities are taking in establishing a sound governance framework. Designed to meet the ethics requirement of the Texas State Board of Public Accountancy, as well as the ethics educational needs of the larger business community. Prerequisite(s): ACCT 5130 or consent of instructor.

BUSI 5410. Creative Thinking and the Business Idea. 3 hours. Introduces the professional MBA to students with the major themes developed for the program. The course discusses the essential of entrepreneurship, risk taking and market opportunity. Students are expected to develop a major, discussing the market opportunities for a business product or service. Corequisite(s): FINA 5170.

BUSI 5420. Assessing the Business Opportunity. 3 hours. Investigates what a business professional needs to conduct a thorough industry, market and competitor analysis and to determine the degree of match between the opportunity and the firm. Topics developed are mission and vision, understanding corporate strategy and structure, market segments and demand factors, etc. Prerequisite(s): BUSI 5410. Corequisite(s): must take ACCT 5130 in the same term/semester.

BUSI 5430. Designing, Creating and Managing the Delivery Systems. 3 hours. Focuses on the essentials of designing, creating and managing the business firm's delivery system. Topics include designing value into products and services, creating and managing distribution channels, quality management ideas, process planning and facility layout. Prerequisite(s): BUSI 5420. Corequisite(s): BCIS 5120.

BUSI 5440. Growing Business in Changing Environments. 3 hours. Studies the essentials of managing the business firm within evolving environments. Concepts required for monitoring and control, along with tools for decision making. Sets the foundation for other topics such as organizational structures, redesign, threats and opportunities, and adjusting delivery and communications systems to dynamic environments. Prerequisite(s): BUSI 5430. Corequisite(s): DSCI 5180.

BUSI 5900. Special Problems. 1–3 hours. Open to graduate students who are capable of developing a problem independently. Problem chosen by the student and developed through conferences and activities under the direction of the instructor. Prerequisite(s): approved applications for special problems/independent research/dissertation credit must be submitted to the CoB Graduate Programs Office prior to registration.

BUSI 5920-BUSI 5930. Problems in Lieu of Thesis. 3 hours each.

BUSI 6100. Seminar in University Teaching for Business Administration. 3 hours. Topics in teaching methodologies. Focus on those topics that provide doctoral students with practical teaching tips to help them become more effective teachers. Different learning styles are addressed and frameworks, theories and teaching models are presented that help doctoral students continually improve their teaching throughout their career.

BUSI 6220. Applied Regression Analysis. 3 hours. Applications of multivariate regression analysis, canonical correlation analysis and nonparametric statistical procedures to issues in business research involving multivariate data. Topics include building, evaluating and validating a regression model; analyzing models using hierarchical regression, contrast coding, partial correlations and path analysis; and comparing parametric and corresponding nonparametric tests. Prerequisite(s): DSCI 5180 or equivalent and BUSI 6450 (may be taken concurrently).

BUSI 6240. Applied Multivariate Statistics. 3 hours.

Applications of multivariate statistical procedures involving data reduction techniques and analyzing multidimensional relationships in business research. Topics include multivariate analysis of variance, discriminant analysis, logistic regression, exploratory factor analysis, cluster analysis, multidimensional scaling and conjoint analysis. Prerequisite(s): BUSI 6220.

BUSI 6280. Applications in Causal and Covariance Structure Modeling. 3 hours.

Application of CSM techniques to the analysis of behavioral data in business research. "Hands-on" practice using LISREL to examine measurement and structural models containing directly observed and latent variables. Provides a solid working knowledge of how to conceptualize measurement and structural models, the standard LISREL and SIMPLIS syntax for estimating these models, and proper interpretation of LISREL output. LISREL assumptions, limitations, tricks and traps are explored. Specific topics include reviews of causality and path analysis, covariance algebra, creating path diagrams and structural equations, LISREL notation and syntax, considerations in model identification, estimation, evaluation and interpretation. Specific application areas include confirmatory factor analysis and its extensions, causal models with directly observed and latent variables. Course also takes a critical look at the analysis of experimental data, modeling quadratic and interaction terms, analysis of ordinal and other non-normal variables. Prerequisite(s): BUSI 6220, BUSI 6240 (may be taken concurrently), and BUSI 6450. Students must have a thorough knowledge of multiple regression, factor analysis, ANOVA and ANCOVA. Students are also expected to have a solid grasp of the fundamentals of research design, including how to assess the internal and external validity of research designs, as well as how to assess the validity and reliability of multi-item behavioral measures. Exposure to matrix algebra is encouraged.

BUSI 6450. Business Research Methods. 3 hours.

Designed to introduce doctoral students to the methods and measurements of business research, including scientific method, research design and measurement. Focus on topics that provide doctoral students with a better understanding of theoretical frameworks used in research. Form and structure of explanations, laws and theories used in research are examined and discussed. Prerequisite(s): DSCI 5180 or equivalent.

BUSI 6480. Advanced Issues in Research Design. 3 hours.

Experimental and quasi-experimental approaches to solving problems using the scientific method. Observation, generalization, explanation and prediction using experimentation and statistical inference. Statistical principles in experimental design including ANOVA and MANOVA techniques. After completing the course, students are prepared for conducting experiments. Prerequisite(s): BUSI 6450 or equivalent.

BUSI 6900. Special Problems. 1–3 hours. Open to graduate students who are capable of developing a problem independently. Problem chosen by the student and developed through conferences and activities under the direction of the instructor. Prerequisite(s): approved applications for special problems/independent research/dissertation credit must be submitted to the CoB Graduate Programs Office prior to registration.

Business Computer Information Systems

see Information Technology and Decision Sciences

Business Law

see Finance, Insurance, Real Estate and Law

Chamber Music

see Music

Chemistry

Chemistry, CHEM

CHEM 5010. Introduction to Graduate Teaching and Research. 2 hours. Topics include university policies, safety in the laboratory, first aid techniques, teaching techniques, audio-visual facilities and operation, use of the university libraries, university/departmental computational facilities, PC facilities and use, and maintaining a research journal. Required for all full-time first-year graduate students. Prerequisite(s): graduate standing in the chemistry department.

CHEM 5200. Physical Chemistry. 3 hours. A survey of selected topics in physical chemistry, including thermodynamics, mechanics, statistical mechanics, heterogeneous and homogeneous equilibria, and chemical kinetics. Prerequisite(s): CHEM 3520 or consent of department.

CHEM 5210. Advanced Physical Chemistry. 3 hours. The basic concepts of quantum mechanics are emphasized utilizing several models to aid in the description, such as the square well model, the rigid rotator, the hydrogen atom and the hydrogen molecule ion. The applications of quantum mechanics to chemical systems are considered in terms of resonance, wave mechanics, perturbation and variation methods. Prerequisite(s): pass exemption examination in physical chemistry, or CHEM 5200.

CHEM 5380. Organic Chemistry. 3 hours. A survey of organic chemistry involving a systematic study of classes of reactions with an integration of fact and theory. Prerequisite(s): CHEM 2380 or consent of department.

CHEM 5390. Selected Topics in Analytical Chemistry. 3 hours. Topics of current interest, which vary from year to year. Prerequisite(s): consent of department. May be repeated for credit as topics vary.

CHEM 5450. Advanced Techniques in Analytical Chemistry. 1–3 hours. Methods and instrumentation currently used in the analysis of materials. Presented in modular units of approximately three to four weeks duration. Typical subjects include fundamentals of liquid and gas-liquid chromatography, atomic absorption spectroscopy, polarography and related electroanalytical methods and X-ray fluorescence spectroscopy. Credit: 1 semester hour per module. May be repeated for credit as topics vary. Laboratory fee when laboratory involved.