estimation of plant and animal population parameters including density and abundance, survival, recruitment, space-use, undetected or unreported counts, line transects, point sampling techniques, change-in-rate estimators including capture-recapture and exploitation or catch-per-unit-effort; raw data, line transects, point sampling techniques, change-in-rate estimators including capture-recapture and exploitation or catch-per-unit-effort; raw data, half-normal, negative log, and normal models; use of mark-recapture and mark-resight data; and analysis of variance in population dynamics; principles of model building and role of model building in population management.

7031 Experimentation (3) Prereq.: EXST 7013 or 7014 or 7015 or equivalent. Comparison of designs, models, and analyses; emphasis on factorial experiments, complete and incomplete block designs, and randomized complete block designs; analysis of variance for common and multiple parameter models such as binomial, normal, Poisson, and hierarchical models; hypothesis testing and credible sets; posterior simulation via Markov Chain Monte Carlo; and performance of Bayesian procedures.

7086 Advanced Seminar in Statistics (1-3) F,Su Prereq.: consent of instructor. May be repeated for credit when topics vary. Pass-fail grading. May be taken for a max. of 6 hrs. of credit when topics vary. Independent study under the guidance of graduate faculty.

7087 Advanced Topics in Statistics (1-3) V Prereq.: consent of instructor. May be repeated for credit when topics vary. Pass-fail grading. May be taken for a max. of 6 hrs. of credit when topics vary. Independent study under the guidance of graduate faculty.

268 Experimental Statistics

7025 Biological Population Statistics II (3) V Prereq.: EXST 7013 or equivalent. Extensive development and application of statistical techniques and concepts in evaluation of population dynamics; principles of model building and role of model building in population management.

7032 Survey Design (3) V Prereq.: EXST 7013 or equivalent. Comparison of experimental and quasi-experimental designs; repeated measures, covariance analysis, and confounding in factorial experiments; emphasis on social and behavioral science research problems.

7034 Regression Analysis (3) F Prereq.: EXST 7013 or 7014 or 7015 or equivalent. Applications of least squares methods; concepts of error and residuals, and model constraints to unbalanced cross-classified and nested data; emphasis on analysis of variance and covariance for fixed effects models.

7036 Categorical Data Analysis (3) S Prereq.: EXST 7013 or 7014 or 7015 or equivalent. Statistical techniques used in analyzing categorical data; contingency tables, log-linear models, and repeated measures for nominal and ordinal data; emphasis on computer analysis and interpretation.

7037 Multivariate Statistics (3) F Prereq.: EXST 7013 or 7014 or 7015 or equivalent, and knowledge of matrix algebra. Comparison of multivariate techniques and analyses; emphasis on discriminant analysis, factor analysis and principal component analysis, canonical correlation, cluster analysis, and analysis of variance.

7038 Statistical Methods for Spatial Data (3) F Prereq.: EXST 7013, 7014, 7015 or 7019. Overview of statistical methods for analysis of data on spatially referenced phenomena; fixed spatial data, point pattern data, area data; topics include spatial correlation, variograms, kriging and spatial prediction; spatial sampling; and spatial modeling. Applications from other disciplines are encouraged, course work includes relevant statistical software and term project.

7039 Statistical Methods for Reliability and Survival Data (3) S Prereq.: EXST 7013 or 7014 or 7015. Characteristics of lifetime data; non-parametric methods including Kaplan Meier estimation; lifetime parametric models, parametric methods for single data distribution; planning life test; system reliability concepts; failure time regression; censored data.

7062 Advanced Topics in Statistical Theory (3) V Prereq.: EXST 7061. May be repeated for credit when topics vary. Topics of current interest; emphasis on theoretical development of statistical methodology.

7083 Practicum in Statistical Consulting I (2) V Prereq.: EXST 7013 or 7014, and permission of instructor. 4 hrs. independent study. Pass-fail grading. Supervised application of statistical techniques to research problems; readings, oral presentations, and discussions on statistical consulting; problem-solving; mock consulting sessions; participation in statistical consulting situations under faculty supervision.

7084 Practicum in Statistical Consulting II (F,S,Su) Prereq.: EXST 3015 or consent of instructor. 4 hrs. independent study. Pass-fail grading. May be taken for a max. of 6 sem. hrs. credit. Primary responsibility for statistical consulting situations when the supervisor is graduate faculty.

7085 Special Problem in Statistics (1-3) F,S,F,Su Prereq.: permission of department or 200-level course in statistical analysis and a technical paper on an advanced topic in statistics is required. Development of a topic in advanced statistics under faculty supervision.

7086 Advanced Seminar in Statistics (1) F,S,Su Prereq.: consent of instructor. May be repeated for credit when topics vary. Pass-fail grading. May be taken for a max. of 50-min. seminar on an advanced topic in statistics as a part of the department's seminar series.

7087 Advanced Topics in Statistics (1-3) V Prereq.: consent of instructor. May be repeated for credit when topics vary. Pass-fail grading. May be taken for a max. of 6 hrs. of credit when topics vary. Independent study under the guidance of graduate faculty.

3000 Personal Money Management (1) See HUEC 1060.

3115 Financing and Legal Aspects of Entrepreneurship (3) Prereq.: MGT 3111 or 3112 or equivalent. Students majoring in business should enroll in FIN 3715.

3351 Principles of Real Estate (3) Prereq.: IAST 3110 or IAST 3351 or IAST 3332 or equivalent. Characteristics and valuation of common real estate; cash flow analysis considering income tax effects, financial leverage, risk-return trade-offs, and alternative methods of disposition.

3352 Real Estate Finance and Investment (3) Prereq.: IAST 3331 or 3332 or equivalent. Real estate financing decisions for residential and income-producing properties; risk-return analysis for varying conditions of financial leverage; decision making related to pricing, alternative financing methods, refinancing, mortgage portfolio management, financing methods, government involvement in mortgage market and housing finance.

3354 Topics in Real Estate (3) Prereq.: FIN 3352 or 3332 or consent of instructor. Topics vary.

3355 Real Estate Finance (3) Prereq.: IAST 3315 or 3317 or 3321 or 3316. Real estate financing decisions for residential and income-producing properties; risk-return analysis for varying conditions of financial leverage; decision making related to pricing, alternative financing methods, refinancing, mortgage portfolio management, financing methods, government involvement in mortgage market and housing finance.

3441 Life and Health Insurance (3) Prereq.: FIN 3440. Analysis of insurance protecting against economic loss caused by death, disability, or old age; derivation of premiums, reserves, benefits; legal aspects; operational features; use of contracts and provisions; disability income protection, longevity, and other related issues.

3447 Probability and Statistics (3) Prereq.: FIN 3440. Property and liability risks; insurance coverages available to meet these risks; basic insurance principles that apply in various property and casualty insurance contracts; functional aspects of the insurance company operations.

3460 Risk and Insurance Management (3) Prereq.: FIN 3715 or 3716. Risk management from the business manager's viewpoint; insurance and financial market methods of pooling and transferring risk; identification and evaluation of risk; hedging, self insurance, reinsurance, and organizational design.

3700 Placement (3) Prereq.: FIN 3715 or 3716. Students interested in commercial banking careers or in the role of banks within the American enterprise system. Economic role and evolution of banks; structure of banking; lending and investment techniques; bank organization and regulation; asset and liability management; credit risk management; bank performance analysis.

3701 Financial Institutions (3) Prereq.: FIN 3715 or 3716. Characteristics and functions of financial institutions and processes; functions of financial intermediation and allocation of financial resources; analysis of current developments in financial institutions and in money and capital markets; theories of interest rate determination; management of credit risk, interest rate risk, and operational risk.

3716 Business Finance (3) Prereq.: FIN 3715 or 3716; FIN 3718 or 3719 or 3715 or 3716 or equivalent. Open only to minority majors.

3717 Advanced Business Finance (3) Prereq.: FIN 3716. Credit will not be given for both this course and FIN 3715 or 3716. Intended primarily for students in the E. J. Ourso College of Business. Students minoring in business should enroll in FIN 3715. Principles and procedures of financial management; investment and financial decisions within the context of the financial environment; budgeting, institutional and international environment of the firm.

3718 International Financial Management (3) Prereq.: FIN 3715 or 3716 and ACCT 2001. Credit will not be given for both this course and FIN 3715 or 3804. Intended primarily for students in the E. J. Ourso College of Business. Students minoring in business should enroll in FIN 3715. Principles and procedures of financial management; investment and financial decisions within the context of the financial environment; budgeting, institutional and international environment of the firm.

3722 Investments and Portfolio Management (3) Prereq.: FIN 3715 or 3716 or equivalent. Hands on applications of financial tools introduced in FIN 3716; financial analysis, forecasting, capital budgeting, and business evaluation.

3723 Investment Banking (3) Prereq.: FIN 3715 or 3716. Characteristics and functions of financial markets and institutions; process of financial intermediation and allocation of financial resources; analysis of current developments in financial institutions and in money and capital markets; theories of interest rate determination; management of credit risk, interest rate risk, and operational risk.

3726 Corporate Finance (3) Prereq.: FIN 3715 or 3716. Credit will not be given for both this course and FIN 3715 or 3716. Intended primarily for students in the E. J. Ourso College of Business. Students minoring in business should enroll in FIN 3715. Principles and procedures of financial management; investment and financial decisions within the context of the financial environment; budgeting, institutional and international environment of the firm.

3800 Personal Money Management (1) See HUEC 1060.

3826 Investments (3) Prereq.: FIN 3826 or FIN 3716 or 3816 or 3819 or 3810 or ACCT 2001 or 2002 or permission of department. May be repeated for a max. of 12 sem. hrs. of credit when topics vary. Hands on applications of financial tools introduced in FIN 3716; financial analysis, forecasting, capital budgeting, and business evaluation.

3900 Directed Study and Research (1-6) Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. of credit. Research under direction of faculty member; written proposal must be approved by faculty member and department chair prior to registration.

3910 Topics in Finance (1-3) Prereq.: FIN 3826 or consent of instructor. May be taken for a max. of 6 sem. hrs. of credit when topics vary. Topics vary. Credit will not be given for both this course and FIN 3715 or 3716. Open only to minority majors.

3930 Undergraduate Internship in Finance (3) Prereq.: FIN 3715 or 3716 or junior or senior standing, and consent of department. May be repeated for a max. of 3 sem. hrs. of credit when topics vary. Internship in a financial institution. May be repeated for credit. On-the-job experience in an approved
7718 Multinational Financial Management (3) Prereq.: BADM 7090 or equivalent. Cross border investment, investment in emerging markets, sign up, sourcing, investment, exposure, and cash management; concepts of political risk assessment; techniques in transactional trade; alternative financial market; financial control and financial contracts.

7719 Advanced Financial Management (3) Prereq.: BADM 7090. Theory of business finance and evaluation of its usefulness in financial decision-making; capital structure and dividend decisions; legitimacy of alternative decision criteria; implications of uncertainty and imperfection in financial decisions.

7720 Topics in Business Finance (3) Prereq.: BADM 7090 or equivalent. Detailed treatment of topics not covered in depth in BADM 7090 or FIN 7719; prospectus usually available before registration.

7740 Venture Capital and Investment Banking (3) Prereq.: BADM 7090 or equivalent. The role of venture capitalists and investment banks in financing, advising, and influencing companies through the initial public offering; the structure of venture capital funds; stages of investment; compensation; valuation; interactions between venture capital and economic activity, the legal environment, and social and ethical norms.

7750 Seminar in Corporate Finance (3) Prereq.: FIN 7550. Primarily for doctoral students. Theory of choice under certainty and uncertainty; investment and financing decisions of firms; valuation of stocks and options; capital structure and dividend models related to corporate control. 7826 Investment Analysis and Portfolio Theory (3) Prereq.: BADM 7090 or equivalent. Financial aspects of capital markets, mechanics of securities trading; analytic techniques for evaluating investment management, behavior of stock prices over time; fundamentals of technical analysis; measuring performance of securities and portfolios, security valuation, portfolio selection. 7844 Student Managed Investment Fund (3) Prereq.: BADM 7090 or equivalent and permission of instructor. Course may be repeated for max. of 9 hr. credits if topics vary. Management and operation of the Student Managed Investment Fund; calculation and monitoring of performance in an institutional equity portfolio; establishment of investment objectives, including asset allocation and selection, and assessment and management of risk; settlement, accounting, and reporting of results. 7858 Seminar in Economics and Political Economy (3) Prereq.: FIN 7750. Primarily for doctoral students. Speculative price as a stochastic process; information revelation in and through speculative price; normative and positive models of investment theory; applications of contingent-claims/derivative securities pricing; theory and empiricism of fixed income securities. 7855 Seminar in Options, Futures, and Other Derivatives (3) Prereq.: FIN 7626 and ECON 7610 or equivalent; consent of instructor. Management and application of the Student Managed Investment Fund; calculation and monitoring of performance in an institutional equity portfolio; establishment of investment objectives, including asset allocation and selection, and assessment and management of risk; settlement, accounting, and reporting of results. 7856 Seminar in Economics and Political Economy (3) Prereq.: FIN 7750. Primarily for doctoral students. Speculative price as a stochastic process; information revelation in and through speculative price; normative and positive models of investment theory; applications of contingent-claims/derivative securities pricing; theory and empiricism of fixed income securities. 7855 Seminar in Options, Futures, and Other Derivatives (3) Prereq.: FIN 7626 and ECON 7610 or equivalent; consent of instructor. Management and application of the Student Managed Investment Fund; calculation and monitoring of performance in an institutional equity portfolio; establishment of investment objectives, including asset allocation and selection, and assessment and management of risk; settlement, accounting, and reporting of results. 7856 Seminar in Economics and Political Economy (3) Prereq.: FIN 7750. Primarily for doctoral students. Speculative price as a stochastic process; information revelation in and through speculative price; normative and positive models of investment theory; applications of contingent-claims/derivative securities pricing; theory and empiricism of fixed income securities. 7855 Seminar in Options, Futures, and Other Derivatives (3) Prereq.: FIN 7626 and ECON 7610 or equivalent; consent of instructor. Management and application of the Student Managed Investment Fund; calculation and monitoring of performance in an institutional equity portfolio; establishment of investment objectives, including asset allocation and selection, and assessment and management of risk; settlement, accounting, and reporting of results. 7856 Seminar in Economics and Political Economy (3) Prereq.: FIN 7750. Primarily for doctoral students. Speculative price as a stochastic process; information revelation in and through speculative price; normative and positive models of investment theory; applications of contingent-claims/derivative securities pricing; theory and empiricism of fixed income securities.

1409 Science of Foods (2) F Prerequisites and concepts related to selection, preparation, processing, preservation, distribution, and utilization of food. 2000 Fundamentals of Food Science (3) S Prereq.: BIOL 1201 and CHEM 1201 or permission of instructor. Introduction to scientific methods. May be taken for a max. of 6 sem. hrs. of credit. 2001 Food, constituents, new product development, food preservation, packaging, and sale. 2002 Food Safety and Quality (3) S Prereq.: BIOL 1201 and CHEM 1201 or permission of instructor. Basic concepts of food safety including; introduction into food safety; extensive examination of food contaminants and toxins; foodborne illness; and foodborne illness case studies.

3900 Food Science Research (1-3) Prereq.: permission of instructor. May be taken for a max. of 6 sem. hrs. of credit. Student outlines and executes project and prepares a written report; problems related to processing, quality control, safety, and nutritional evaluation. 3999 Food Science and Technology Seminar (1) F Prereq.: permission of department. May be taken for a max. of 2 sem. hrs. credit. Scientific seminar preparation and presentations on selected topics in food science and technology.

4010 Quality Assurance in the Food Industry (4) E-S To be announced.

4050 Food Composition and Analysis (4) S Prereq.: BIOL 2060 and CHEM 2261 or equivalent. 3 hrs. lecture; 3 hrs. lab. Principles of official and acceptable chemical and physical methods used in food analysis; application of these methods to sample preparation, chemical analysis, and food process evaluation.

4060 Food Chemistry (6) F Prereq.: BIOL 2060 and CHEM 2261 or equivalent. 3 hrs. lecture; 3 hrs. lab. Chemistry of food components; reactions occurring during processing and storage.

4076 Food Product Development (3) S Prereq.: FDSCH 4060 and 4095. 2 hrs. lecture; 3 hrs. lab. Capstone course that food science students should take in their last spring semester of their program, after having taken a majority of their food science courses. Development of new food products; marketing, package design, and other aspects of product development.

4086 Food Processing (3) S Prereq.: BIOL 1201 and CHEM 1201 or permission of instructor. Examination of all aspects of seafood processing including: history and economics; processing equipment; water resources; energy; and other sources of energy.

4095 Principles of Sensory Evaluation of Foods (4) F Prereq.: BIOL 2060 and CHEM 2261 or equivalent. 3 hrs. lecture; 3 hrs. lab. Capstone course that food science students should take in their last spring semester of their program, after having taken a majority of their food science courses. Development of new food products; marketing, package design, and other aspects of product development.

4162 Food Microbiology (4) S Prereq.: BIOL 2061 and consent of department. 2 hrs. lecture; 4 hrs. lab. Also offered as BIOL 4162. Microbiological principles as applied to food and food products; emphasis on rapid detection of food borne microorganisms.

4163 Industrial Microbiology (4) Prereq.: BIOL 4110 or equivalent. 2 hrs. lecture; 4 hrs. lab. See BIOL 4163.

7844 Student Managed Investment Fund (3) Prereq.: BADM 7090 or equivalent and permission of instructor. Management and operation of the Student Managed Investment Fund; calculation and monitoring of performance in an institutional equity portfolio; establishment of investment objectives, including asset allocation and selection, and assessment and management of risk; settlement, accounting, and reporting of results. 7855 Seminar in Economics and Political Economy (3) Prereq.: FIN 7626 and ECON 7610 or equivalent; consent of instructor. Management and application of the Student Managed Investment Fund; calculation and monitoring of performance in an institutional equity portfolio; establishment of investment objectives, including asset allocation and selection, and assessment and management of risk; settlement, accounting, and reporting of results. 7856 Seminar in Economics and Political Economy (3) Prereq.: FIN 7750. Primarily for doctoral students. Speculative price as a stochastic process; information revelation in and through speculative price; normative and positive models of investment theory; applications of contingent-claims/derivative securities pricing; theory and empiricism of fixed income securities.

Food Safety (3) S Prereq.: BIOL 2060 and 2262 or equivalent. BIOL 2061, and at least 3 sem. hrs. in any food science course; or consent of instructor. 2 hrs. lecture; 3 hrs. lab. Microbiology and biochemistry of food spoilage; engineering technology; engineering and food preservation; food pest management; food safety including: introduction into food safety; extensive examination of food contaminants and toxins; foodborne illness; and foodborne illness case studies.

Food Science and Technology Seminar (1) F Prereq.: permission of department. May be taken for a max. of 2 sem. hrs. credit. Scientific seminar preparation and presentations on selected topics in food science and technology.

Food Science Research (1-3) Prereq.: permission of instructor. May be taken for a max. of 6 sem. hrs. of credit. Student outlines and executes project and prepares a written report; problems related to processing, quality control, safety, and nutritional evaluation. 3999 Food Science and Technology Seminar (1) F Prereq.: permission of department. May be taken for a max. of 2 sem. hrs. credit. Scientific seminar preparation and presentations on selected topics in food science and technology.

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