performance in an institutional equity portfolio; establishment of investment objectives, including asset allocation, market value assessment and management of risk; settlement, accounting, and reporting of results.

7850 Seminar in Investments (3) Prereq.: FIN 7550. Prerequisite: consent of instructor. Speculative testing of a stochastic process; information revelation in and through speculative price; normative and positive models of investment decision; hedge funds; contingent-claims/derivative securities pricing; theory and empiricism of fixed income securities.

7855 Options, Futures and Other Derivatives (3) Prereq.: FIN 7856 and ECON 7610 or equivalent: consent of instructor: mathematical maturity required. Arbitrage and valuation of financial derivatives; models derived via continuous time Ito processes; binomial, finite difference, Monte Carlo and other numerical approaches; review of mathematical statistics, stochastic processes, and Itô calculus.

7900 Individual Study in Finance (3) Masters and doctoral students may take the course for credit 3 times, respectively. For students who wish in-depth study of a selected finance problem. Proposal outlining nature and objectives of a research project must be approved by departmental supervisor prior to registration; written report of semester’s activities and findings required for credit.

7930 Graduate Internship in Finance (3) Prereq.: consent of department: Pass/fail graded based on a written evaluation by the professional supervisor; a written report by the student, and the faculty member’s evaluation. At least 20 hrs. per week in regular semester or 35 hrs. per week in summer session of learning experience in finance under the general supervision of a faculty member and the direct supervision of a professional in finance. On-the-job experience in an approved finance position.

7950 Seminar in Research (1) Required of all doctoral students by departmental committee. Research concentration in finance during each semester of full-time residence; only 3 sem. hrs. may be applied toward the degree. Advanced research in finance with emphasis on research of doctoral candidates, faculty, and invited guests.

8000 Thesis Research (1-12 per sem.) “S/U” grading.

8890 Dissertation Research (1-12 per sem.) “S/U” grading.

FOOD SCIENCE • FDSC

1049 Science of Foods (2) F Concepts and principles related to selection, preparation, processing, preservation, distribution, and use of foods.

2000 Fundamentals of Food Science (3) S Prereq.: BIOL 1201 and CHEM 1201 or permission of instructor. Introduction to scientific principles in chemistry of food constituents, new products development, food preservation, processing, packaging, and safety.

3000 Food Safety (3) F Prereq.: BIOL 1201 and CHEM 1201 or permission of instructor. Basic concepts of food safety including: introduction into food safety; extensive examination of causative agents responsible for food borne illness; food borne disease case studies.

3900 Food Science Research (1-3) Prereq.: permission of department. May be taken for a max. of 6 sem. hrs. of credit. Students interested in executing project and prepares a written report: problems related to processing, quality control, safety, and nutritional evaluation of foodstuffs.

3999 Food Science and Technology Seminar (1-3) F Prereq.: permission of department. May be taken for a max. of 2 hrs. of credit. Scientific seminar preparation and presentations on selected topics in food science and technology.

4005 Food Engineering Systems (3) S-O Prereq.: PHYS 2001 and MATH 1442 or equivalent. 2 hrs. lecture; 3 hrs. lab. Application of engineering principles to various unit operations in food processing.

4040 Quality Assurance in the Food Industry (4) S-E Take DARY 4040.

4050 Food Composition and Analysis (4) S Prereq.: FDSC 4060 and CHEM 2060 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 the composition, quality control, and authenticity of foods; reactions occurring during processing and storage.

4070 Food Laws, Standards, and Regulations (2) Prereq.: Federal, state, and city food laws, and how they are regulated, manufactured, distributed, and use of foods, additives and regulated products.

4075 Topics in Food Science (1-4) S Prereq.: CHEM 2060 or equivalent. BIOL 2051, 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; enzyme engineering: technology of food preservation and food sanitation; methods of food preservation.

4076 Food Product Development (3) S Prereq.: FDSC 4060 and CHEM 2060 or equivalent. 3 hrs. lecture; 2 hrs. lab. An introduction for students that wish to pursue a career in product development. Students study the influence of new food trends, marketing, package design, and other aspects of product development.

4088 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; the production of safe foods and food ingredients; proteins; enzymes; food microorganisms; industrial microbiology; microbial activity; safety of seafood in the seafood processing industry; resources; processing techniques (freezing, canning, drying, salting, and pickling); processing by species; storage and distribution; and safety considerations.

4905 Principles of Sensory Evaluation of Foods (4) F Prereq.: EXST 2201 or equivalent. 3 hrs. lecture; 3 hrs. lab. Theory and current practices used to evaluate, measure, analyze, and interpret reactions to those characteristics of foods and materials as they are perceived by the human senses of sight, smell, taste, touch, and hearing.

4112 Food Microbiology (4) S Prereq.: BIOL 2051 and consent of department. 2 hrs. lecture; 4 hrs. lab. Also offered as BIOL 4162. Microbiological principles as applied to food, production of foodborne pathogens, emphasis on rapid detection of foodborne microorganisms.

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

7000 Perspectives in Nutrition (1) F Development of nutrition as a science; current trends in nutritional research. 1201 or permission of instructor. Principles of risk assessment, food chemical safety and toxicology; mycotoxins, aquatic toxins; natural toxins; food additives; and safety considerations.

7016 Current Topics Related to Nutrients in Processed Foods (3) Effects of processing on nutrient retention in food.

7020 Food Packaging (3) S-E 2 hrs. lecture; 3 hrs. lab. Food package systems related to specific products and processes. Product composition, problems and packaging solutions, and shelf life considerations.

7030 Advanced Food Research (1-6) Prereq.: consent of instructor: selected topics in food science and technology. 2 hrs. lecture; 3 hrs. lab. Methods of chemical, physical, and instrumental analysis in food colors and flavors; natural and synthetic flavorings and colors.

7050 Food Protein Biotechnology (3) F-E Prereq.: FDSC 4060, 4050 or permission of instructor. Overview of contemporary principles and applications of protein and enzyme technology, genetic engineering, and immunology for the production of safe foods and food ingredients; proteins as functional ingredients in the food industry; and the role of biotechnology in the food industry as well as ethical and legal issues; career opportunities in protein and enzyme biotechnology.

7060 Advanced Concepts in Food Science (3) V Prereq.: FDSC 4060 and BIOL 4087. Analysis of new and progressive concepts in food science.

7071 Seminar in Food Science (1) F May be taken for a max. of 3 hrs. of credit. Selected topics in food science and technology.

7075 Advanced Food Preservation (4) V Prereq.: FDSC 4075 or equivalent. 3 hrs. lecture; 3 hrs. lab including field trips to local food processors. Preservation technologies of various food processing operations from raw ingredients to final product.

7094 Seminar in Nutrition (1) Same as HUCC 7094. May be taken for a max. of 2 hrs. of credit. Prereq.: ANSC 7094, DARY 7091, FDSC 7071, HUEC 7010, PLSC 7094 or equivalent or previous slide (not poster) presentation at a professional meeting. Must be approved by instructor.

7699 Toxicology Seminar (1) See CBS 7699.

8000 Thesis Research (1-12 per sem.) “S/U” grading.

8000 Dissertation Research (1-12 per sem.) “S/U” grading.

FRENCH • FREN

Native speakers of French will not receive credit for courses marked with an asterisk (*).

General education courses are marked with stars (**).

*1001, **1002 Elementary French (4.4) F,S Prereq.: consent of instructor: selected topics in food science should take the French placement exam. Students who do not place in FREN 1002 or higher through the placement exam should enroll in FREN 1001. Students with previous study of French should enroll in FREN 1001. FREN 1002 or equivalent prior study is prerequisite for FREN 1002. Students completing FREN 1002 or equivalent or higher with a grade of "C" or higher may not enroll in FREN 1001 for credit with permission of the Department. Students completing FREN 2101 or equivalent, with a grade of "C" or higher, may not enroll in FREN 1002 for credit without permission of the Department. Basic lexicon and structure of French; emphasis on communicative language use; supplementary work in language laboratory.

**1020 French for Readers (3) S Prereq.: BIOL 1201 or permission of instructor. Specialized course to satisfy departmental reading requirement for graduate students, but carrying no graduate credit. Undergraduate students with a grade of "C" or higher may not enroll in FREN 1001 for credit with permission of the Department. Basic lexicon and structure of French; emphasis on communicative language use; supplementary work in language laboratory.

**1020 French for Readers (3) Prereq.: BIOL 1201 or permission of instructor. Specialized course to satisfy departmental reading requirement for graduate students, but carrying no graduate credit. Undergraduate students with a grade of "C" or higher may not enroll in FREN 1001 for credit with permission of the Department. Basic lexicon and structure of French; emphasis on communicative language use; supplementary work in language laboratory.

**1020 French for Readers (3) Prereq.: BIOL 1201 or permission of instructor. Specialized course to satisfy departmental reading requirement for graduate students, but carrying no graduate credit. Undergraduate students with a grade of "C" or higher may not enroll in FREN 1001 for credit with permission of the Department. Basic lexicon and structure of French; emphasis on communicative language use; supplementary work in language laboratory.

**1020 French for Readers (3) Prereq.: BIOL 1201 or permission of instructor. Specialized course to satisfy departmental reading requirement for graduate students, but carrying no graduate credit. Undergraduate students with a grade of "C" or higher may not enroll in FREN 1001 for credit with permission of the Department. Basic lexicon and structure of French; emphasis on communicative language use; supplementary work in language laboratory.

**1020 French for Readers (3) Prereq.: BIOL 1201 or permission of instructor. Specialized course to satisfy departmental reading requirement for graduate students, but carrying no graduate credit. Undergraduate students with a grade of "C" or higher may not enroll in FREN 1001 for credit with permission of the Department. Basic lexicon and structure of French; emphasis on communicative language use; supplementary work in language laboratory.