

Courses

Description of Required Food Science and Background Courses:

1. CHEMISTRY

General Chemistry

CHEM 0231. GENERAL CHEMISTRY I. 1st and 2nd Semesters, Summer. Lect. 4, 4 credits. The principles of chemistry. Topics covered include: stoichiometry, atomic structure and periodic table, molecular structure, gas laws, kinetic molecular theory, oxidation and reduction, and properties of solids and liquids. The course is intended for students who need a rigorous introductory course in chemistry as a prerequisite for advanced courses. Co-requisites: CHEM 0233 and MATH 0107.

CHEM 0233. GENERAL CHEMISTRY LABORATORY I. 1st and 2nd Semesters, Summer. Lab 3, 1 credit. Introduction to Chemical Laboratory Techniques. Exercises exemplifying the principles of stoichiometry, chemical reactivity, chemical and physical separations, gas laws and molecular structure are performed. Techniques for the measurement of mass, volume, pressure, and temperature, and the graphical presentation of data are emphasized. Co-requisite: CHEM 0231.

CHEM 0232. GENERAL CHEMISTRY II. 1st and 2nd Semesters, Summer. Lect. 4, 4 credits. Topics studied include acids and bases, chemical kinetics, chemical equilibrium. The elements and their compounds are studied in terms of periodic relationships. Schemes for the detection and identification of the elements are used to illustrate descriptive chemistry and the principles of chemical equilibria. Prerequisite: CHEM 0231. Co-requisite: CHEM 0234.

CHEM 0234. GENERAL CHEMISTRY LABORATORY II. 1st and 2nd Semesters, Summer. Lab 3, 1 credit. A continuation of CHEM 0233. The principles presented in CHEM 0232 are applied to the laboratory study of rates of reactions, chemical equilibria, electrochemical cells and acid base and redox reactions. Limited qualitative analysis is included. Co-requisite: CHEM 0232. Prerequisite: CHEM 0233.

CHEM 0307. QUANTITATIVE ANALYSIS. 2nd Semester. Lect. 3, 3 credits. Theory and methodology of chemical analysis, classical, electrochemical, spectrochemical and chromatographic methods. CHEM 0232. Prerequisite: CHEM 0233.

CHEM 0308. QUANTITATIVE ANALYSIS/LABORATORY. 2nd Semester. Lab. 6, 2 credits. Laboratory application of selected methods presented in CHEM 0307. Co-requisite: CHEM 0307

Organic Chemistry

CHEM 0320. ORGANIC CHEMISTRY I. 1st Semester, Summer. Lect. 3, 3 credits. Nomenclature, physical properties and reactions of carbon compounds; reaction mechanisms; spectroscopy as an aid to the elucidation of molecular structures. Prerequisites: CHEM 0232 and 0234. Co-requisite: CHEM 0322.

CHEM 0322. ORGANIC CHEMISTRY LABORATORY I. 1st Semester. Lab 6, 2 credits. Illustrative practical applications of the principles presented in CHEM 0320. Co-requisite: CHEM 0320.

Biochemistry

CHEM 0360. BIOCHEMISTRY OF CELL REGULATION. 2nd semester, Lect. 3, 3 credits. Fundamental principles of biochemistry (protein structure and function, conformational change, kinetics, thermodynamics, equilibrium, etc.) are covered. Cell biology topics will include plasma membrane and membrane proteins, cell signaling cascades, regulation of gene transcription and translation, regulation of the cell cycle, cancer and oncogenes, nerve transmission, and immune response. Also listed as BIOL 0360. Prerequisite: CHEM 0231 and 0322. Co-requisite: CHEM 0320.

CHEM 0361. INTRODUCTION TO METHODS IN BIOTECHNOLOGY. 2nd semester, Lab 3, 1 credit. Methods for the isolation, purification, and assay of biomolecules from tissue, plants, food, or cell extracts. Methods will include biochemical assays, spectroscopy, chromatography, and electrophoresis. Also listed as BIOL 0361. Prerequisite: CHEM 0233 and 0234. Co-requisite: CHEM 0322.

2. BIOLOGICAL SCIENCES

Biology

BIOL 0120. ORGANISMIC BIOLOGY. 2nd Semester, Summer, On Demand. Lect. 3, 3 credits. The course deals with diversity, morphology, physiology, relationships and importance of animals, plants and other organisms.

BIOL 0121. ORGANISMIC BIOLOGY LABORATORY. 2nd Semester, Summer, On Demand. Lab 2, 1 credit. An introductory level laboratory course to correlate with Biology 120. A survey of organisms and their evolutionary relationship is the main focus of the course content. The anatomical features of representative specimens from the five kingdoms are studied. Experiments demonstrating various physiological processes are also included. Corequisite: BIOL 0120

General Microbiology

BIOL 0301. GENERAL MICROBIOLOGY. 1st and 2nd Semesters, Summer on Demand. Lect. 3, 3 credits. Emphasis on bacteria, their growth and control, composition and structure, nutrition and metabolism, classification, ecology, role in nature and significance to man. Consideration is also given to other microbial forms. Prerequisite: BIOL 0111 or 0230.

BIOL 0303. GENERAL MICROBIOLOGY LABORATORY. 1st and 2nd Semesters, Summer on Demand. Lab 2, 1 credit. A laboratory course to correlate with BIOL 0301. Co-requisite: BIOL 0301.

3. HOSPITALITY MANAGEMENT

HOMT 0314. MANAGEMENT OF BASIC FOOD PRODUCTION. 1st Semester. Lect. 1, Lab 2, 3 credits. This course provides students with the basic skills in food preparation and production, including theory of food production, terminology, functions and ingredients, methods of cooking, purchasing, use of equipment, recipe and measurement analysis, safe food handling, and sanitation.

4. HUMAN NUTRITION

NUSC 0111. NUTRITION, WELLNESS AND HEALTH. 1st and 2nd Semesters. Lect. 3, 3 credits. This fundamental course in nutrition, wellness and health is designed to enable students to understand the relationship of other sciences to nutrition, the macro and micro nutrients required by the body, food sources of the nutrients, chemical structure and the functions of these nutrients in the promotion of health and the prevention of disease. Prerequisites: CHEM 0221, 0223; 0222, 0224; CHEM 0231, 0232; CHEM 0233, 0234.

NUSC 0302. NUTRITIONAL BIOCHEMISTRY. 2nd Semester. Lect. 4, 4 credits. The study of biochemical and physiological roles of fats, carbohydrates, proteins, nucleic acids, vitamins, minerals and phytochemicals in the human body. Nutrient digestion, absorption, transport and metabolism are studied as well as the interrelationship of nutrients in maintaining cell structure and cellular functions. Nutrient requirements and nutritional assessment for all age levels and an integration of related scientific disciplines with the study of nutrition is also included. Prerequisites: NUSC 0111; PHSI 0303; CHEM 0320, 0322, 0360 and 0361.

NUSC 0501. PROFESSIONAL SEMINAR SERIES. This course will serve as the food and nutritional sciences junior, senior or graduate level course that incorporates training in professional ethics, professional and technical skills development and conflict resolution as well as career alternatives in dietetics, food or nutrition professions, professional organizations, continuing education and development. Guest lecturers will bring the benefits of real work world experiences to the classroom. During the semester, a focus on skills to seek and obtain employment will also be emphasized.

5. FOOD SCIENCE

FOSC 0301. INTRODUCTION TO FOOD SCIENCE. 1st Semester, Lect. 3, 3 credits. An overview of basic scientific principles involved in food science as related to the food industry. A study of food components, their functionalities in food processing, principles, technologies and emerging technologies involved in food processing, preservation, food safety and nutrition are presented. Quality aspects of specific food and food products will also be discussed. Prerequisite: CHEM 0232; BIOL 0101, 0102; MATH 0108.

FOSC 0302. FOOD SENSORY EVALUATION/LAB. 2nd Semester, Lect. 3, 3 credits. Procedures and test methods used to evaluate the sensory properties of food and to evaluate food preferences. Students will gain an understanding of the senses and their role in food evaluation and learn laboratory, in-house and consumer sensory test methods, reporting methods and situations for their use, as well as learn how to design sensory experiments and to analyze, interpret and report test results. Prerequisite: EON 0300.

FOSC 0400. Seminar In food science. 2nd Semester. Lect. 1, 1 credit. The study and discussion of special problems and concerns related to current topics in food science, nutritional science and general dietetics. Reports and weekly dialogue on timely issues in each specified area of interest are covered in preparation for a professional career.

FOSC 0403. FOOD PROCESSING (MEAT, DAIRY, FRUITS, & VEGETABLES). 2nd Semester, Lect. 3, 3 credits. Methods and principles of processing and preserving fruits, vegetables, dairy, and meat, as well as their related physicochemical and microbial properties

FOSC 0405. METHODS OF FOOD AND NUTRITIONAL ANALYSIS. 1st Semester. Lect. 2, 2 credits. A lecture course designed to teach students current theory and analytical techniques including sensory evaluation that may be employed for conducting research in food science, nutrition and agriculture. Additionally, the course demonstrates to the student current analytical techniques used in the area of food, nutrition, and agriculture. Students will have the opportunity to execute the experiments in FOSC 506. Prerequisites: CHEM 0320 or CHEM 0360 and 0561.

FOSC 0406. METHODS OF FOOD AND NUTRITIONAL ANALYSIS. 1st Semester. Lab 4, 2 credits. A laboratory course for FOSC 0505 designed to develop skills and techniques used in food and nutritional science research. Current analytical methods employed focus on food, nutrition and agriculture. Pre-corequisites: FOSC 0505; CHEM 0320 or CHEM 0360 and 0561.

FOSC 0407. FOOD MICROBIOLOGY. The lecture part of this course is designed to introduce the student to food microbiology, and particularly, the interaction of microorganisms with food. Emphasis will be placed on the types and role of microorganisms in food spoilage, food borne pathogens, and methods designed to control microbial

spoilage of foods. Laboratory sessions are geared towards methods of determining types of microbial contaminants in foods, and methods of preservations and sanitation in food handling facilities. Prerequisite: BIOL 0301.

FOSC 0410. FOOD CHEMISTRY. Lect. 4, 4 credits. Chemistry of macro- and micro-elements in various foods, fruits, vegetables, cereals, meats and dairy products; changes of nutrients during storage and processing; and application of this knowledge to quality and product development in the food industry. Prerequisites: FOSC 0301 or CHEM 0320; PHYS 0301; MATH 0207.

FOSC 0471. FOOD PROCESS ENGINEERING TECHNOLOGY. 2nd Semester. Lect. 3, Lab 3, 4 credits. This course is designed for students majoring in food science or other related disciplines. The course will provide the student with the critical thinking and problem solving skills used in food engineering, an understanding of the engineering concepts associated with how the physical properties of food materials are applied in processing, thermal processing, refrigeration, drying, evaporation, separation and unit operations used in the analysis and design of food and biological systems. The techniques and effectiveness of food packaging are also covered. Prerequisite: PHYS 0301; MATH 0207

FOSC 0473. PROD. RES. INNOV. & SENSORY EVAL. OF FOODS. This course will serve as the food science senior level capstone course that incorporates and unifies the principles of food chemistry, food microbiology, food engineering, food processing, nutrition, sensory analysis and statistics. Teaching methods will include a class and laboratory setting for product research, innovation and sensory evaluation of foods. Prerequisite: PHYS 0301, MATH 0207, Core Food Science Courses.

6. PHYSICS

General Physics

PHYS 0301. ELEMENTARY GENERAL PHYSICS. 1st and 2nd Semesters, Summer Lect. 3, 3 credits each semester. Basic concepts and theories of measurements, mechanics, properties of matter, heat, and thermodynamics with applications in the biological sciences. To be taken in sequence with Phys. 0302. Pre or Co-requisite: MATH 0107.

PHYS 0303. INTRODUCTION TO LABORATORY WORK IN PHYSICS. 1st and 2nd Semesters, Summer. Laboratory work 2, 1 credit. Laboratory work illuminating the concepts, theories applications of physics as encountered in PHYS 0301. Pre- or Co- requisite: PHYS 0301.

7. MATHEMATICS

Calculus

MATH 0207. ANALYTIC GEOMETRY & CALCULUS I. 1st and 2nd Semesters, Summer. Lect. 4, 4 credits. Introduction to analytic geometry; functions; limits; derivatives and integrals with some applications. Prerequisite: Minimum grade of "C" in MATH 0108 or MATH 0110 or Departmental Approval. Students will not be allowed to use both MATH 0207 and MATH 0227 to fulfill degree requirements in any major.

Other Math Courses

MATH 0107. COLLEGE ALGEBRA & TRIGONOMETRY I. 1st and 2nd Semesters, Summer. Lect. 4, 4 credits. Sets; real numbers; absolute value; inequalities; relations and functions; polynomial functions, systems of linear equations, exponential and logarithmic functions; mathematical induction; finite sums and series. Prerequisite: Placement or

minimum grade of "C" in MATH 0106.

MATH 0108. COLLEGE ALGEBRA & TRIGONOMETRY II. 1st and 2nd Semesters, Summer. Lect. 4, 4 credits. Circular functions; trigonometric functions; vectors in the plane; complex numbers; theory of equations; analytic geometry. Prerequisite: Minimum grade of "C" in MATH 0107 or Departmental Approval.

8. STATISTICS

ECON 0300. INTRODUCTION TO STATISTICAL ANALYSIS. 1st Semester. Lect. 3, 3 credits. This course deals with the collection, presentation, and interpretation of data. It is concerned with the measures of location, measures of dispersion, probability and probability distributions. Prerequisite: MATH 0107.

Other

ECON 0201. PRINCIPLES OF ECONOMICS. 1st and 2nd Semester and Summer. Lect. 3, 3 credits each course. The first part of this course sequence deals with the aggregate volume of the output of the American Economy, with the extent to which its resources are employed, with size of the national income, and with the "general price level." The second part deals with division of total output among competing uses. It considers problems of income distribution. Its interest is in relative prices of particular goods and services

9. COMMUNICATIONS

ENGL 0101. ENGLISH COMPOSITION I. 1st and 2nd Semesters, Summer. Lect. 3, 3 credits. An introductory composition course focusing on the essentials of effective writing and emphasizing the expository essay. The course provides instruction and practice in writing clear, coherent, well-developed essays using a variety of rhetorical strategies.

ENGL 0102. ENGLISH COMPOSITION II. 1st and 2nd Semesters, Summer. Lect. 3, 3 credits. A continuation of ENGL 0101 emphasizing persuasion, critical analysis of literature of various genres, library and Internet research techniques, and the research paper. Prerequisite: ENGL 0101.

ENGL 0208. SURVEY OF AMERICAN LITERATURE II. 2nd Semester. Lect. 3, 3 credits. A survey of American literature from 1865 to the present. Prerequisite: ENGL 0102.

ENGL 0327. PUBLIC SPEAKING. 1st and 2nd Semesters, Summer. Lect. 3, 3 credits. Preparation and delivery of speeches to audiences.

10. OTHER ADDITIONAL COURSES

CSCI 0100. INTRODUCTION TO COMPUTER CONCEPTS AND APPLICATIONS. 1st and 2nd Semesters, Summer. Lect. 3, 3 credits. Instruction and tutoring in basic computer skills, designed for students with little or no background in Computer Science. An overview of computer applications including word processors, spreadsheets, databases, and other popular software. This course includes hands-on experience with microcomputers. This course cannot be used as a CSCI elective for CSCI majors. Prerequisites: None.

PHIL 0348. BUSINESS ETHICS. 1st and 2nd Semesters. Lect. 3, 3 credits. An examination of reasonable moral judgment as applied to business areas such as marketing, personnel relations, and quality control. The course also includes consideration of corporate ethics, ethics in international business, and moral versus economic values.