

COURSE DESCRIPTIONS

for

NUTRITION

SCIENCE

and

FOOD SCIENCE AND

TECHNOLOGY

NFSC 201 Food Science *Credits 3. 3 Lecture Hours.*

(AGRI 1329) Food Science. The fundamental biological, chemical and physical scientific principles associated with the study of foods; topics include food composition and nutrition, food additives and regulations, food safety and toxicology, food processing, food engineering, food biotechnology, product development and sensory evaluation.

NFSC 202 Fundamentals of Human Nutrition *Credits 3. 3 Lecture Hours.*

(BIOL 1322, HECO 1322) Fundamentals of Human Nutrition. Principles of nutrition with application to the physiologic needs of individuals; food sources and selection of an adequate diet; formulation of Recommended Dietary Allowances; nutritional surveillance; for non-nutrition majors only.

NFSC 203 Scientific Principles of Human Nutrition *Credits 3. 3 Lecture Hours.*

Chemistry and physiology of proteins, carbohydrates, lipids, vitamins and minerals; their ingestion, digestion, absorption, transport and metabolism.

Prerequisite: [CHEM 119](#) . Majors only.

NFSC 204 Perspectives in Nutrition and Food Science *Credit 1. 1 Lecture Hour.*

Current trends in the fields of nutrition and food science; critical review relevant literature in these fields ranging from popular press to peer-reviewed research; study of original research and market trends in understanding food, food processing, nutrients, health and diseases.

Prerequisites: NUTR and FSTC majors.

NFSC 210 Horizons in Nutrition and Food Science *Credits 2. 2 Lecture Hours.*

Introduction to nutrition and food science career opportunities through presentations by nutrition and food science researchers and industry professionals; addresses issues of professionalism including portfolio development, teamwork, and critical thinking skills.

NFSC 211 Scientific Principles of Foods *Credits 4. 3 Lecture Hours. 3 Lab Hours.*

Basic principles underlying selection, preparation and preservation of food in relation to quality standards, acceptability and aesthetics. Introduction to composition, nutritive value, chemical and physical properties of foods; introduction to experimental study of foods.

Prerequisites: [CHEM 119](#), [NFSC 202](#) or [NFSC 203](#); sophomore classification or above.

NFSC 222 Nutrition for Health and Health Care *Credits 3. 3 Lecture Hours.*

Analysis of nutrition with emphasis on providing a basic understanding of nutrition and its role in disease prevention and treatment.

NFSC 300 Religious and Ethnic Foods *Credits 3. 3 Lecture Hours.*

Understanding religious and ethnic foods with application to product development, production, and nutritional practices; emphasis on different food rules and priorities with attention given to different religious and ethnic groups within the US and around the world.

Prerequisites: Junior or senior classification or approval of instructor; basic knowledge of food science and nutrition helpful.

NFSC 301 Nutrition Through Life *Credits 3. 3 Lecture Hours.*

Analysis of nutrition with emphasis on human biological needs through stages of the life cycle; biochemical, physiological and anthropometric aspects of nutrition.

Prerequisites: [NFSC 203](#); junior classification or approval of department head.

NFSC 304 Food Service Systems Management *Credits 4. 3 Lecture Hours. 3 Lab Hours.*

Principles of food service management used in selecting, storing, preparing and serving food in quantity; emphasis on menu planning, quality control, purchasing, equipment and layout/design; application of basic food service systems management principles, including financial planning and personnel issues.

Prerequisites: [NFSC 203](#) and [NFSC 211](#), junior or senior classification.

NFSC 305 Fundamental Baking *Credits 3. 2 Lecture Hours. 3 Lab Hours.*

Fundamentals of baking; chemical and physical properties of ingredients, methods of baking all products, fundamental reactions of dough, fermentation and oven baking.

Prerequisite: [CHEM 222](#) or [CHEM 227](#) or approval of department head.

NFSC 307/ANSC 307 Meats *Credits 3. 2 Lecture Hours. 3 Lab Hours.*

Integrated studies of the meat animal processing sequence regarding the production of meat-type animals and the science and technology of their conversion to human food.

Prerequisites: Grade of C or better in [ANSC 111](#) and [ANSC 113](#); junior classification or approval of instructor.

Cross Listing: [ANSC 307/NFSC 307](#).

NFSC 311 Principles of Food Processing *Credits 3. 2 Lecture Hours. 3 Lab Hours.*

Principles and practices of canning, freezing, dehydration, pickling and specialty food manufacture; fundamental concepts of various techniques of preparation, processing, packaging and use of additives; processing plants visited.

Prerequisite: [NFSC 201](#); junior or senior classification or approval of department head or instructor.

Cross Listing: [HORT 311/NFSC 311](#).

NFSC 312 Food Chemistry *Credits 3. 3 Lecture Hours.*

The fundamental and relevant chemistry and functionality of the major food constituents (water, carbohydrates, lipids, proteins, phytochemical nutraceuticals) and study of food emulsion systems, acids, enzymes, gels, colors, flavors and toxins.

Prerequisite: [NFSC 201](#); [CHEM 227](#); [CHEM 237](#) or approval of department head or instructor.

NFSC 313 Food Chemistry Laboratory *Credit 1. 3 Lab Hours.*

Laboratory exercises investigating specific molecules, such as food acids, enzymes, pigments and flavors, and chemical interactions in foods, such as oxidation reactions, emulsion systems, and functional properties from a fundamental chemistry rather than an analytical perspective.

Prerequisite: [NFSC 201](#); [CHEM 227](#); [CHEM 237](#) or approval of department head or instructor.

NFSC 314 Food Analysis *Credits 3. 1 Lecture Hour. 4 Lab Hours.*

Selected standard methods for assay of food components; principles and methodology of both classical and instrumental techniques for food analysis.

Prerequisite: [NFSC 201](#); [NFSC 311/HORT 311](#); [CHEM 227](#); [CHEM 237](#) or approval of department head or instructor.

Cross Listing: [DASC 314/NFSC 314](#).

NFSC 315/AGSM 315 Food Process Engineering Technology *Credits 3. 2 Lecture Hours. 2 Lab Hours.*

Elementary mechanics, physical and thermal properties of food and processing materials, heat transfer, mass and energy balances, psychrometrics (properties of air), insulation.

Prerequisites: Grade of C or better in [PHYS 201](#) or [PHYS 218](#), or approval of instructor.

Cross Listing: [AGSM 315/NFSC 315](#).

NFSC 320 Understanding Obesity *Credits 3. 3 Lecture Hours.*

Perspectives of obesity in food science, nutrition, health and psychology; study of obesity factors in relation to genetics, exercise physiology and sociology with emphasis on food and nutrition.

Prerequisites: Junior or senior classification or approval of instructor

NFSC 324 Food Safety and Preventive Controls for Human Food *Credits 3. 3 Lecture Hours.*

Microbiological food spoilage, fermentation and safety; U.S. Food and Drug Administration (FDA) recognized curriculum for "preventive controls qualified individual" within the FDA Hazard Analysis and Risk-based Preventive Controls for Human Food regulation.

Prerequisites: Junior or senior classification or approval of instructor.

NFSC 326/ANSC 326 Food Bacteriology *Credits 3. 3 Lecture Hours.*

Microbiology of human foods and accessory substances; raw and processed foods; physical, chemical and biological phases of spoilage; standard industry techniques of inspection and control.

Prerequisite: approval of instructor; junior or senior classification.

Cross Listing: [ANSC 326/NFSC 326](#).

NFSC 327/ANSC 327 Food Bacteriology Lab *Credit 1. 3 Lab Hours.*

Laboratory to accompany [NFSC 326/ANSC 326](#).

NFSC 365 Nutritional Physiology of Vitamins and Minerals *Credits 3. 3 Lecture Hours.*

Fundamental nutritional significance of fat soluble and water soluble vitamins and minerals to human metabolism, cell biology and physiology; micro-nutrient groups as per metabolic function or biochemical and physiological actions; important dietary sources, absorption, storage, metabolism, (bio)chemistry, deficiency and toxicity of individual nutrients in this context and basis of DRIs.

Prerequisites: [NFSC 203](#) and [NFSC 301](#); junior or senior classification.

NFSC 401 Food Product Development *Credits 3. 2 Lecture Hours. 3 Lab Hours.*

Design and develop food products using principles of food chemistry, food processing, nutrition, sensory analysis and statistics; team collaborate to improve food product characteristics to meet the needs of a changing society.

Prerequisites: [NFSC 201](#), [NFSC 311/HORT 311](#), [NFSC 312/DASC 312](#), [NFSC 313/DASC 313](#), [NFSC 314/DASC 314](#), [NFSC 315/AGSM 315](#), [NFSC 326/DASC 326](#), or concurrent enrollment; senior classification or approval of instructor..

NFSC 404 Nutrition Assessment and Planning *Credits 3. 3 Lecture Hours.*

Examines the methods of determining the nutritional status of individuals, dietary assessment techniques, planning nutritional care including diet modification and nutrition counseling.

Prerequisites: [NFSC 203](#), [NFSC 211](#) and [NFSC 301](#); junior classification or approval of department head.

NFSC 407 Nutrition Care and Therapy *Credits 4. 3 Lecture Hours. 3 Lab Hours.*

Application of the Nutrition Care Process for clinical diagnoses and conditions; planning of nutritional care plans for complex patients, including the formulation and planning for enteral and parenteral nutrition support.

Prerequisites: [NFSC 203](#), [NFSC 211](#), [NFSC 301](#) and [NFSC 404](#); junior classification; dietetics track; or approval of instructor.

NFSC 410 Nutritional Pharmacometrics of Food Compounds *Credits 3. 3 Lecture Hours.*

Nutritional pharmacokinetics and pharmacodynamics of food compounds; specific examples of toxicological and pharmacological effects of food compounds.

Prerequisites: [NFSC 201](#), [NFSC 202](#) or [NFSC 203](#), [CHEM 222](#), or [CHEM 227](#), or approval of instructor; junior or senior classification.

NFSC 412 Nutritional Treatment of Disease *Credits 3. 3 Lecture Hours.*

Nutritional intervention in pathological conditions, based on biochemical, physiological and psychological effects of disease state; current research in clinical nutrition.

Prerequisites: [NFSC 203](#); [NFSC 301](#), [BIOL 319](#) and [BICH 410](#), or concurrent enrollment; senior classification or approval of instructor.

NFSC 420 Supervised Research in Mediterranean Nutrition and Food Processing in Italy *Credits 3. 3 Other Hours.*

Exploration of principles of Mediterranean diet, European nutrition regulatory aspects, wine-making and food processing in Italy.

Prerequisite: [NFSC 201](#), [NFSC 202](#) or [NFSC 203](#); must be 18 years of age; class and tours taught in English; priority given to majors in FSTC or NUTR.

NFSC 422 Food Processing for Sustainable Nutrition in Brazil *Credits 3. 3 Other Hours.*

Sustainable nutrition and food processing in Brazil; hands-on learning at the Federal University of Vicosa, the Amazon Biotechnology Center, food processing plants and other research centers in the Amazon, central Brazil and Rio De Janeiro.

Prerequisites: [NFSC 201](#), [NFSC 202](#), or [NFSC 203](#); must be 18 years of age; class and tours taught in English; priority given to majors in FSTC or NUTR.

NFSC 430 Community Nutrition *Credits 3. 3 Lecture Hours.*

Principles of assessing nutrition problems in populations and planning nutrition programs to promote health in communities including nutrition education and food and nutrition policy; introduction to food and nutrition assistance programs.

Prerequisites: [NFSC 203](#) and [NFSC 301](#); junior or senior classification.

FSC 444 Fundamentals of Food Law *Credits 3. 3 Lecture Hours.*

History, development of, and fundamental principles behind current food regulations, including food labeling, adulteration, food safety, food additives, dietary supplements, and import and export laws; overview of government agency jurisdiction, international law and ethics.

Prerequisite: [NFSC 201](#); junior or senior classification.

NFSC 446/HORT 446 Commercial Fruit and Vegetable Processing *Credits 3. 2 Lecture Hours. 3 Lab Hours.*

Pilot plant and laboratory operations pertaining to processed fruits, vegetables and beverages; new product development emphasized via individual laboratory projects.

Prerequisite: [NFSC 311/HORT 311](#).

Cross Listing: [HORT 446/NFSC 446](#).

NFSC 457/ANSC 457 Hazard Analysis and Critical Control Point System *Credits 3. 3 Lecture Hours.*

Hazard Analysis and Critical Control Point (HACCP) principles specifically related to meat and poultry; microbiological and process overviews; good manufacturing practices and standard operating procedures development.

Prerequisite: [NFSC 326/ANSC 326](#) or approval of instructor.

Cross Listing: [ANSC 457/NFSC 457](#).

NFSC 469 Experimental Nutrition Laboratory *Credits 3. 2 Lecture Hours. 3 Lab Hours.*

Investigation of tools and molecular techniques used in studies of nutrition and metabolism (e.g. obesity, diabetes, cardiovascular disease, etc.); didactic and hands-on laboratory components; includes model systems, measurements of energy balance, body composition, RNA and protein analyses.

Prerequisites: Junior or senior classification or approval of instructor.

NFSC 470/ANSC 470 Quality Assurance for the Food Industry *Credits 3. 3 Lecture Hours.*

Principles of food system process control including statistical process control (SPC) and the tools required to assure uniform communication and understanding of quality assurance systems.

Prerequisite: Junior or senior classification.

Cross Listing: [ANSC 470/NFSC 470](#).

NFSC 475 Nutrition and Physiological Chemistry *Credits 3. 3 Lecture Hours.*

Fundamentals of physiology, biochemistry and nutrition and their relationship to the organismic and cellular metabolism of animals; biochemical basis of hormonal action.

Prerequisites: [NFSC 203](#), [NFSC 301](#), [NFSC 365](#), and [BICH 410](#); senior classification or approval of department head.

NFSC 481 Seminar *Credit 1. 1 Lecture Hour.*

Guidelines and practice in journal article review and making effective technical presentations; strategies for conducting a job search; development of résumés and letters and interviewing targeted for careers in nutrition and food science or graduate school.

Prerequisite: Senior classification in nutrition and food science.

NFSC 485 Directed Studies *Credits 0 to 4. 0 to 4 Other Hours.*

Directed study on selected problems in the area of nutrition and food science not covered in other courses.

Prerequisites: Junior or senior classification; approval of department head; 2.0 GPR in major and overall.

NFSC 487/ANSC 487 Sensory Evaluation of Foods *Credits 3. 2 Lecture Hours. 2 Lab Hours.*

Application of sensory science principles and practices to food systems including an understanding of discriminative, descriptive and consumer sensory techniques.

Prerequisites: [CHEM 222](#) or [CHEM 228](#); junior or senior classification.

Cross Listing: [ANSC 487/NFSC 487](#).

NFSC 489 Special Topics in... *Credits 1 to 4. 1 to 4 Other Hours.*

Selected topics in an identified area of nutrition and food science. May be repeated for credit.

Prerequisite: Junior or senior classification.

NFSC 491 Research *Credits 0 to 4. 0 to 4 Other Hours.*

Research conducted under the direction of a faculty member in nutrition and food science. May be repeated 3 times for credit. Registration in multiple sections of this course are possible within a given semester provided that the per semester credit hour limit is not exceeded.

TAMU CORE AND SUPPORTING COURSEWORK

ACCT 229 Introductory Accounting *Credits 3. 3 Lecture Hours.*

(ACCT 2301, 2401) Introductory Accounting. Analysis, recording and reporting of business transactions; partnership and corporation accounting; analysis and use of financial statements.

Prerequisite: Sophomore classification.

AGEC 105 Introduction to Agricultural Economics *Credits 3. 3 Lecture Hours.*

(AGRI 2317) Introduction to Agricultural Economics. Characteristics of our economic system and basic economic concepts; survey of the farm and ranch firm and its organization and management; structure and operation of the marketing system; functional and institutional aspects of agricultural finance; government farm programs.

AGEC 314 Marketing Agricultural and Food Products *Credits 3. 3 Lecture Hours.*

Operations involved in movement of agricultural commodities from farmer to consumer via several intermediaries; functions involve buying, selling, transportation, storage, financing, grading, pricing and risk bearing; agricultural supply chain or value chain is studied in detail; marketing aspects of commodities and differentiated goods.

Prerequisites: AGEC 105 or 3 hours of economics; and junior or senior classification

ANTH 205 Peoples and Cultures of the World *Credits 3. 3 Lecture Hours.*

Survey of human cultures around the world using case studies of customs and cultural organization; case studies exemplifying contrasting types of cultures and societies.

ANTH 210 Social and Cultural Anthropology *Credits 3. 3 Lecture Hours.*

(ANTH 2351) Social and Cultural Anthropology. Evolution of cultures; differences, similarities and effects of material and non-material culture on economic, social and political organization.

BICH 303 Elements of Biological Chemistry *Credits 3. 3 Lecture Hours. 1 Lab Hour.*

Survey of the biochemical sciences designed for the non-biochemistry major; overview of the chemistry and metabolism of biologically important molecules, the biochemical basis of life processes, cellular metabolism and regulation. Students requiring biochemistry in greater depth should register for BICH 410 and BICH 411. Prerequisite: CHEM 222 or equivalent; not open to biochemistry majors.

BICH 410 Comprehensive Biochemistry I *Credits 3. 3 Lecture Hours. 1 Lab Hour.*

Structure, function and chemistry of proteins and carbohydrates; kinetics, mechanisms and regulation of enzymes; metabolism of carbohydrates. Not open to biochemistry or genetics majors.

Prerequisite: [CHEM 228](#) or approval of instructor.

BICH 411 Comprehensive Biochemistry II *Credits 3. 3 Lecture Hours. 1 Lab Hour.*

A continuation of [BICH 410](#). Structure, function, chemistry and metabolism of lipids and nucleic acids; cellular metabolism viewed from the standpoint of energetics and control mechanisms; interrelationships of metabolic pathways. Not open to biochemistry or genetics majors.

Prerequisite: [BICH 410](#).

BICH 431/GENE 431 Molecular Genetics *Credits 3. 3 Lecture Hours.*

Molecular basis for inheritance; gene structure and function, chromosomal organization, replication and repair of DNA, transcription and translation, the genetic code, regulation of gene expression, genetic differentiation and genetic manipulations.

Prerequisites: [BICH 410](#) or [BICH 440](#); [GENE 301](#) or [GENE 302](#) or [GENE 320/BIMS 320](#).

Cross Listing: [GENE 431/BICH 431](#).

BIOL 111 Introductory Biology I *Credits 4. 3 Lecture Hours. 3 Lab Hours.*

(BIOL 1306 and 1106, 1406) Introductory Biology I. First half of an introductory two-semester survey of contemporary biology that covers the chemical basis of life, structure and biology of the cell, molecular biology and genetics; includes laboratory that reinforces and provides supplemental information related to the lecture topics.

BIOL 112 Introductory Biology II *Credits 4. 3 Lecture Hours. 3 Lab Hours.*

(BIOL 1307 and 1107, 1407) Introductory Biology II. The second half of an introductory two-semester survey of contemporary biology that covers evolution, history of life, diversity and form and function of organisms; includes laboratory that reinforces and provides supplemental information related to the lecture topics.

Prerequisite: [BIOL 111](#).

BIOL 319 Integrated Human Anatomy and Physiology I *Credits 4. 3 Lecture Hours. 3 Lab Hours.*

Integrated approach to cellular, neural, skeletal, muscular anatomy and physiology; includes some histology, histopathology, radiology and clinical correlations.

Prerequisite: [BIOL 111](#) and [BIOL 112](#), or [BIOL 107](#).

BIOL 320 Integrated Human Anatomy and Physiology II *Credits 4. 3 Lecture Hours. 3 Lab Hours.*

Continuation of BIOL 319. Integrated approach to endocrine, cardiovascular, respiratory, digestive, urinary, reproductive and developmental anatomy and physiology; includes some histology, histopathology, radiology and clinical correlations.

Prerequisite: [BIOL 111](#) and [BIOL 112](#), or [BIOL 107](#); [BIOL 319](#) or approval of instructor.

BIOL 351 Fundamentals of Microbiology *Credits 4. 3 Lecture Hours. 4 Lab Hours.*

Introduction to modern microbiology with emphasis on prokaryotes; includes microbial cell structure, function, and physiology; genetics, evolution, and taxonomy; bacteriophage and viruses; pathogenesis and immunity; and ecology and biotechnology; includes laboratory experience with microbial growth and identification.

Prerequisites: [BIOL 112](#); [CHEM 227](#), and [CHEM 237](#) or [CHEM 231](#); or approval of instructor.

BIOL 352 Diagnostic Bacteriology *Credits 4. 2 Lecture Hours. 6 Lab Hours.*

Practical experience in handling, isolation and identification of pathogenic microorganisms using biochemical tests and rapid identification techniques.

Prerequisite: [BIOL 206](#) or [BIOL 351](#).

BIOL 413 Cell Biology *Credits 3. 3 Lecture Hours.*

Structure, function, and biogenesis of cells and their components; interpretation of dynamic processes of cells, including protein trafficking, motility, signaling and proliferation.

Prerequisites: [BIOL 213](#) and [BICH 410](#).

BIOL 414 Developmental Biology *Credits 3. 3 Lecture Hours.*

Concepts of development in systems ranging from bacteriophage to the mammalian embryo; use of recombinant DNA technology and embryo engineering to unravel the relationships between growth and differentiation, morphogenesis and commitment, aging and cancer.

Prerequisite: [BIOL 413](#) or concurrent enrollment or approval of instructor.

CHEM 119 Fundamentals of Chemistry I *Credits 4. 3 Lecture Hours. 3 Lab Hours.*

(CHEM 1311 and 1111, 1411) Fundamentals of Chemistry I. Introduction to modern theories of atomic structure and chemical bonding; chemical reactions; stoichiometry; states of matter; solutions; equilibrium; acids and bases; coordination chemistry; methods and techniques of chemical experimentation; qualitative and semiquantitative procedures applied to investigative situations; also taught at Galveston campus.

CHEM 120 Fundamentals of Chemistry II *Credits 4. 3 Lecture Hours. 3 Lab Hours.*

(CHEM 1312 and 1112, 1412) Fundamentals of Chemistry II. Theory and applications of oxidation-reductions systems; thermodynamics and kinetics; complex equilibria and solubility product; nuclear chemistry; descriptive inorganic and organic chemistry; introduction to analytical and synthetic methods and to quantitative techniques to both inorganic and organic compounds with emphasis on an investigative approach.

Prerequisites: [CHEM 119](#) or [CHEM 107](#) and [CHEM 117](#); also taught at Galveston campus.

CHEM 227 Organic Chemistry I *Credits 3. 3 Lecture Hours.*

(CHEM 2323, 2423) Organic Chemistry I. Introduction to chemistry of compounds of carbon; general principles and their application to various industrial and biological processes.

Prerequisite: [CHEM 102](#) or [120](#). Concurrent registration in [CHEM 237](#) is suggested; also taught at Galveston campus.

CHEM 228 Organic Chemistry II *Credits 3. 3 Lecture Hours.*

(CHEM 2325, 2425) Organic Chemistry II. Continuation of [CHEM 227](#).

Prerequisite: [CHEM 227](#). Concurrent registration in [CHEM 238](#) is suggested; also taught at Galveston campus.

CHEM 315 Fundamentals of Quantitative Analysis *Credits 3. 3 Lecture Hours.*

Quantitative and statistical methods of analysis; solution chemistry; chemical equilibrium of analytically useful reactions; advanced analytical methods including electrochemistry, separations and kinetic methods. **Prerequisite:** [CHEM 102](#) or [120](#).

CHEM 316 Quantitative Analysis *Credits 2. 2 Lecture Hours.*

Introductory quantitative chemical analysis; error propagation and statistics; chemical equilibrium for titrations of weak acids, polyprotic acids, and EDTA; basic chemical instrumentation including spectrophotometry, electrochemistry, and chromatography.

Prerequisite: [CHEM 102](#) or [CHEM 120](#); also taught at Galveston campus.

CHEM 318 Quantitative Analysis Laboratory *Credit 1. 3 Lab Hours.*

Laboratory work consists of selected experiments in quantitative analysis designed to typify operations of general analytical lab, including chemical analyses by volumetric and gravimetric methods; introduction to chemical measurements by spectroscopic and separations techniques and associated instrumentation.

Prerequisites: [CHEM 102](#) or [120](#); [CHEM 315](#) or [CHEM 316](#) or registration therein.

CHEM 237 Organic Chemistry Laboratory *Credit 1. 3 Lab Hours.*

(CHEM 2123, 2223, 2423) Organic Chemistry Laboratory. Operations and techniques of elementary organic chemistry laboratory; preparation, reactions and properties of representative organic compounds. **Prerequisites:** CHEM 102 and CHEM 112, or CHEM 120; CHEM 227 or registration therein; also taught at Galveston campus.

CHEM 238 Organic Chemistry Laboratory *Credit 1. 3 Lab Hours.*

(CHEM 2125, 2225, 2425) Organic Chemistry Laboratory. Continuation of CHEM 237.

Prerequisites: [CHEM 228](#) or registration therein; [CHEM 237](#) or [CHEM 231](#); also taught at Galveston campus.

COMM 203 Public Speaking *Credits 3. 3 Lecture Hours.*

(SPCH 1315) Public Speaking. Training in speeches of social and technical interest designed to teach students to develop and illustrate ideas and information and to inform, stimulate, and persuade their audiences.

COMM 315 Interpersonal Communication *Credits 3. 3 Lecture Hours.*

Speech interaction in person-to-person settings; concepts of perception, attraction, self-disclosure, listening, and conflict management through communication; speech interaction patterns and stages in the development of interpersonal communication.

Prerequisite: Junior or senior classification.

COMM 325 Persuasion *Credits 3. 3 Lecture Hours.*

Theory of effective persuasive communication in interpersonal, small group, and public settings; audience analysis, ethics of persuasion, motivational factors, psychological and rhetorical principles, source credibility, and theories of attitude change.

Prerequisite: Junior or senior classification.

CREATIVE ARTS (<https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#CreativeArts>)

ECON 202 Principles of Economics *Credits 3. 3 Lecture Hours.*

(ECON 2302) Principles of Economics. Elementary principles of economics; the economic problem and the price system; theory of demand, theory of production and the firm, theory of supply; the interaction of demand and supply.

ECON 203 Principles of Economics *Credits 3. 3 Lecture Hours.*

(ECON 2301) Principles of Economics. Measurement and determination of national income, employment and price; introduction to monetary and fiscal policy analysis; the effects of government deficits and debt, exchange rates and trade balances.

Prerequisite: [ECON 202](#) or approval of undergraduate advisor.

ENGL 103 Introduction to Rhetoric and Composition *Credits 3. 3 Lecture Hours.*

(ENGL 1301) Introduction to Rhetoric and Composition. Intensive study of and practice in writing processes, from invention and researching to drafting, revising and editing, both individually and corroboratively; emphasis on effective rhetorical choices including audience, purpose, arrangement and style; focus on writing the academic essay as a vehicle for learning, communicating and critical analysis.

ENGL 104 Composition and Rhetoric *Credits 3. 3 Lecture Hours.*

(ENGL 1302) Composition and Rhetoric. Focus on referential and persuasive researched essays through the development of analytical reading ability, critical thinking and library research skills; for freshman and sophomore students only.

ENGL 210 Technical and Business Writing *Credits 3. 3 Lecture Hours.*

(ENGL 2311) Technical and Business Writing. Focus on writing for professional settings; correspondence and researched reports fundamental to the technical and business workplace—memoranda, business letters, research proposals and presentations, use of graphical and document design; emphasis on audience awareness, clarity of communication and collaborative team-work.

HLTH 236 Race, Ethnicity and Health *Credits 3. 3 Lecture Hours.*

Explore in-depth the racial, ethnic, and cultural dimensions that underlie health and health disparities; emphasis on culture, social economic status and governmental policies as they influence the adaptation of health practices.

HLTH 334/WGST 334 Women's Health *Credits 3. 3 Lecture Hours.*

A broad range of health issues that are either unique to women or of special importance to women; information for the health consumer; preparation as an advocate of healthy lifestyles; awareness of the role health plays in the life of all women.

Prerequisite: Junior or senior classification.

Cross Listing: [WGST 334/HLTH 334](#).

HLTH 354 Medical Terminology for the Health Professions *Credits 3. 3 Lecture Hours.*

Designed for students interested in pursuing a career in a health, medical, scientific or other helping profession; develop medical word power skills combined with related health and disease knowledge.

Prerequisite: Junior or senior classification.

HORT 419 Viticulture and Small Fruit Culture *Credits 3. 3 Lecture Hours.*

Classic winegrape culture in Europe and U.S. are taught; influence of climate, soil, cultivar, rootstock, canopy and management is presented; nutrition, water, spacing, trellis, pruning, IPM and harvest are integrated for quality yields; culture of muscadines, berries, figs and persimmons are taught. Offered in even numbered years.

Prerequisite: [HORT 319](#) or approval of instructor.

HORT 420 Concepts of Wine Production *Credits 3. 3 Lecture Hours.*

Classic wine grapes of the world and where they are produced; evaluation of wine style and quality through formal laboratory tastings.

Prerequisites: [HORT 201](#) or [NFSC 201](#); must be 21 years of age; junior or senior classification.

HORT 421 Enology *Credits 3. 2 Lecture Hours. 3 Lab Hours.*

Provides a basic understanding of each step of the wine making process; emphasis on home and small scale commercial wine production as related to Texas conditions.

Prerequisites: Must be 21 years of age; junior or senior classification.

MATHEMATICS (<https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#Mathematics>)

PHYS 201 College Physics *Credits 4. 3 Lecture Hours. 3 Lab Hours.*

(PHYS 1301 and 1101, 14 01) College Physics. Fundamentals of classical mechanics, heat, and sound. Primarily for architecture, education, premedical, pre dental, and preveterinary medical students.

PHYS 202 College Physics *Credits 4. 3 Lecture Hours. 3 Lab Hours.*

(PHYS 1302 and 1102, 1402) College Physics. Continuation of [PHYS 201](#). Fundamentals of classical electricity and light; introduction to contemporary physics.

Prerequisite: [PHYS 201](#).

PSYC 107 Introduction to Psychology *Credits 3. 3 Lecture Hours.*

(PSYC 2301) Introduction to Psychology. Introductory course dealing with elementary principles of human behavior.

PSYC 300 – 499 (<http://catalog.tamu.edu/undergraduate/course-description/psyc>)

SOCI 205 Introduction to Sociology *Credits 3. 3 Lecture Hours.*

(SOCI 1301) Introduction to Sociology. Sociological perspectives including concepts and methods; social class and social status, the family, minorities, crime, religion, power, urbanization and population.

STAT 301 Introduction to Biometry *Credits 3. 3 Lecture Hours.*

Intended for students in animal sciences. Introduces fundamental concepts of biometry including measures of location and variation, probability, tests of significance, regression, correlation and analysis of variance which are used in advanced courses and are being widely applied to animal-oriented industry. Credit will not be allowed for more than one of [STAT 301](#), [STAT 302](#) or [STAT 303](#).

Prerequisite: [MATH 141](#) or [MATH 166](#) or equivalent.

STAT 302 Statistical Methods *Credits 3. 3 Lecture Hours.*

Intended for undergraduates in the biological sciences. Introduction to concepts of random sampling and statistical inference; estimation and testing hypotheses of means and variances; analysis of variance; regression analysis; chi-square tests. Credit will not be allowed for more than one of [STAT 301](#), [STAT 302](#) or [STAT 303](#).

Prerequisite: [MATH 141](#) or [MATH 166](#) or equivalent.

STAT 303 Statistical Methods *Credits 3. 3 Lecture Hours.*

Intended for undergraduates in the social sciences. Introduction to concepts of random sampling and statistical inference, estimation and testing hypotheses of means and variances, analysis of variance, regression analysis, chi-square tests. Credit will not be allowed for more than one of [STAT 301](#), [STAT 302](#) or [STAT 303](#).

Prerequisite: [MATH 141](#) or [MATH 166](#) or equivalent.

VIBS 305 Biomedical Anatomy *Credits 4. 2 Lecture Hours. 4 Lab Hours.*

Comprehensive mammalian gross anatomy, using the dog as the model species; laboratory dissection, veterinary nomenclature with human correlates and the application of anatomy to clinical situations.

Prerequisites: BIOL 114 and BIOL 124; junior or senior classification; BIMS major with a minimum overall 2.5 Texas A&M GPA.

VTPP 423 Biomedical Physiology I *Credits 4. 3 Lecture Hours. 2 Lab Hours.*

Physiological principles, review of cellular physiology, and development of an understanding of the nervous system and muscle, cardiovascular, and respiratory physiology; clinical applications related to organ systems.

Prerequisites: [VIBS 305](#); junior or senior classification.

BUSINESS MINOR

ACCT 209 Survey of Accounting Principles *Credits 3. 3 Lecture Hours.*

Accounting survey for non-business majors; non-technical accounting procedures, preparation and interpretation of financial statements and internal control. May not be used to satisfy degree requirements for majors in business. Business majors who choose to take this course must do so on a satisfactory/unsatisfactory basis.

FINC 409 Survey of Finance Principles *Credits 3. 3 Lecture Hours.*

Finance survey for non-business majors; financial markets, the investment banking process, interest rates, financial intermediaries and the banking system, financial instruments, time value of money concepts, security valuation and selection, and international finance. May not be used to satisfy degree requirements for majors in business or agribusiness.

Prerequisites: Junior or senior classification; for students other than business and agribusiness.

ISTM 209 Business Information Systems Concepts *Credits 3. 3 Lecture Hours.*

Introduction to the use of computers in data and document management and as a problem-solving tool for business; fundamental concepts of information technology and theory; opportunities to use existing application software to solve various business information systems oriented problems. May not be used to satisfy degree requirements for majors in business.

Prerequisite: For students other than business and agribusiness majors.

MGMT 209 Business, Government and Society *Credits 3. 3 Lecture Hours.*

Impact of the external environment-legal, political, economic and international-on business behavior; market and non-market solutions to contemporary public policies confronting business persons examined including antitrust law, employment and discrimination law, product safety regulation, consumer protection and ethics. May not be used to satisfy degree requirements for majors in business.

Prerequisites: Sophomore classification; for students other than business and agribusiness majors.

MGMT 309 Survey of Management *Credits 3. 3 Lecture Hours.*

Survey for non-business majors of the basic functions and responsibilities of managers; includes the environmental context of management, planning and decision making, organization structure and design, leading and managing people, and the controlling process; issues of globalization, ethics, quality and diversity integrated throughout the course. May not be used to satisfy degree requirements for majors in business.

Prerequisites: Junior classification; for students other than business and agribusiness majors.

MKTG 409 Principles of Marketing *Credits 3. 3 Lecture Hours.*

Survey of the basic concepts and decisions associated with product, promotion, distribution, and pricing; focuses on developing marketing strategies that contribute to building long-term customer relationships and achieving the organization's objectives. May not be used to satisfy degree requirements for a major in business.

Prerequisites: Junior classification; for students other than business and agribusiness majors.

STEM MINOR COURSES

INST 310 Understanding Special Populations. (Credit 3)

Referral, assessment and categorization of special populations including physical, cognitive and affective characteristics; cultural, ethnic, economic and linguistic differences; giftedness; special education and compensatory programs; awareness of legislative history that results in rights for special populations.

Prerequisite: Sophomore classification or above.

INST 322 Foundations of Education in a Multicultural Society. (Credit 3)

Historical, philosophical and cultural foundations of education emphasizing education for a multicultural society

Prerequisite: Junior classification or above.

RDNG 465 Reading in the Middle and Secondary Grades. (Credit 3)

Reading needs of middle and secondary school students with emphasis upon curriculum organization for reading development and assessment of student progress in content area reading. (Only offered in the fall)

TEED 302 Teaching/Learning Processes: Psychological Perspectives on Education. (Credit 3)

Psychological perspectives on instruction; examines learning processes, learner motivation, home and cultural influences, learning strategies; design and delivery of instruction; controversies regarding learning and instruction.

Prerequisites: Junior classification; admission to teacher education.

TEFB 273 Introduction to Culture, Community, Society and Schools. (Credit 3)

Field-based course that introduces the culture of schooling and classrooms for analysis within the lens of language, gender, racial, socio-economic, ethnic and academic diversity; the family as a partner in education and educational equality discussed.

TEFB 322 Teaching and Schooling in Modern Society. *(Credit 3)*

Development, structure, management and finance of secondary schools; historical, philosophical, ethical and moral dimensions of teaching; role of school in a democratic society; teaching as a profession.

Prerequisite: Junior or senior classification.

TEFB 324 Teaching Skills II. *(Credit 3)*

Study and development of teaching skills necessary for applying instructional strategies; teaching general strategies, assessing student learning, and analyzing and synthesizing multiple source data; emphasis given to adolescent development and cultures and to teacher and child cultures. Prerequisites: Successful completion or concurrent enrollment in TEFB 322; junior or senior classification.

TEFB 406 Science in the Middle and Secondary School. *(Credit 3)*

Methods course for the prospective secondary teacher in the physical and biological sciences; implementation of contemporary curricula. Phase IV, Practicum I.

Prerequisites: Completion of Phases I, II and III of the secondary programs; admission to teacher education; enrollment in science-related teaching field. Successful completion of TEFB 322 and TEFB 324. (Only offered in the Fall)

**COURSE DESCRIPTIONS
FOR
FOOD SYSTEMS
INDUSTRY
MANAGEMENT**

NFSC 201 Food Science *Credits 3. 3 Lecture Hours.*

(AGRI 1329) Food Science. The fundamental biological, chemical and physical scientific principles associated with the study of foods; topics include food composition and nutrition, food additives and regulations, food safety and toxicology, food processing, food engineering, food biotechnology, product development and sensory evaluation.

NFSC 210 Horizons in Nutrition and Food Science *Credits 2. 2 Lecture Hours.*

Introduction to nutrition and food science career opportunities through presentations by nutrition and food science researchers and industry professionals; addresses issues of professionalism including portfolio development, teamwork, and critical thinking skills.

NFSC 311/HORT 311 Principles of Food Processing *Credits 3. 2 Lecture Hours. 3 Lab Hours.*

Principles and practices of canning, freezing, dehydration, pickling and specialty food manufacture; fundamental concepts of various techniques of preparation, processing, packaging and use of additives; processing plants visited.

Prerequisite: [NFSC 201](#); junior or senior classification or approval of department head or instructor.

Cross Listing: [HORT 311/NFSC 311](#).

NFSC 315 Food Process Engineering Technology *Credits 3. 2 Lecture Hours. 2 Lab Hours.*

Elementary mechanics, physical and thermal properties of food and processing materials, heat transfer, mass and energy balances, psychrometrics (properties of air), insulation.

Prerequisites: Grade of C or better in [PHYS 201](#) or [PHYS 218](#), or approval of instructor.

Cross Listing: [AGSM 315/NFSC 315](#).

NFSC 326/DASC 326 Food Bacteriology *Credits 3. 3 Lecture Hours.*

Microbiology of human foods and accessory substances; raw and processed foods; physical, chemical and biological phases of spoilage; standard industry techniques of inspection and control.

Prerequisite: BIOL 206 or approval of instructor; junior or senior classification.

Cross Listing: DASC 326/NFSC 326.

NFSC 457/ANSC 457 Hazard Analysis and Critical Control Point System *Credits 3. 3 Lecture Hours.*

Hazard Analysis and Critical Control Point (HACCP) principles specifically related to meat and poultry; microbiological and process overviews; good manufacturing practices and standard operating procedures development.

Prerequisite: NFSC 326/DASC 326 or approval of instructor.

Cross Listing: ANSC 457/NFSC 457.

NFSC 470/ANSC 470 Quality Assurance for the Food Industry *Credits 3. 3 Lecture Hours.*

Principles of food system process control including statistical process control (SPC) and the tools required to assure uniform communication and understanding of quality assurance systems.

Prerequisite: Junior or senior classification.

Cross Listing: ANSC 470/NFSC 470.

NFSC 489 Special Topics in... *Credits 1 to 4. 1 to 4 Other Hours.*

Selected topics in an identified area of nutrition and food science. May be repeated for credit.

Prerequisite: Junior or senior classification

ACCT 209 Survey of Accounting Principles *Credits 3. 3 Lecture Hours.*

Accounting survey for non-business majors; non-technical accounting procedures, preparation and interpretation of financial statements and internal control. May not be used to satisfy degree requirements for majors in business. Business majors who choose to take this course must do so on a satisfactory/unsatisfactory basis.

ACCT 229 Introductory Accounting *Credits 3. 3 Lecture Hours.*

(ACCT 2301, 2401) Introductory Accounting. Analysis, recording and reporting of business transactions; partnership and corporation accounting; analysis and use of financial statements.

Prerequisite: Sophomore classification.

AGEC 105 Introduction to Agricultural Economics *Credits 3. 3 Lecture Hours.*

(AGRI 2317) Introduction to Agricultural Economics. Characteristics of our economic system and basic economic concepts; survey of the farm and ranch firm and its organization and management; structure and operation of the marketing system; functional and institutional aspects of agricultural finance; government farm programs.

AGEC 314 Marketing Agricultural and Food Products *Credits 3. 3 Lecture Hours.*

Operations involved in movement of agricultural commodities from farmer to consumer via several intermediaries; functions involve buying, selling, transportation, storage, financing, grading, pricing and risk bearing; agricultural supply chain or value chain is studied in detail; marketing aspects of commodities and differentiated goods.

Prerequisites: AGEC 105 or 3 hours of economics; and junior or senior classification

AGEC 317 Economic Analysis for Agribusiness Management *Credits 3. 3 Lecture Hours.*

Quantitative methods used to address managerial problems, specifically calculus-based optimization, marginal analysis, elasticities, statistical and forecasting techniques, linear programming, and risk analysis; emphasis on theoretical aspects and applied analysis of managerial problems faced by agricultural firms.

Prerequisites: AGECE 217; ECON 322 or ECON 323; SCMT 303 or STAT 301 or STAT 302 or STAT 303; and junior or senior classification; agricultural economics, agribusiness majors only; or approval of department head.

AGEC 330 Financial Management in Agriculture *Credits 3. 3 Lecture Hours.*

Principles of financial management of farms, ranches, and other agribusiness firms; financial statements, financial statement analysis, time value of money, investment analysis, firm growth, risk management, credit analysis and best business management practices.

Prerequisites: AGECE 105 or 3 hours of economics; ACCT 209 or ACCT 229; and junior or senior classification.

AGEC 340 Agribusiness Management *Credits 3. 3 Lecture Hours.*

Survey of management practices throughout the food marketing chain; focuses on farm and ranch suppliers, farmers and ranchers, first handlers, food processors, food distributors, and restaurants, food retailers and institutions; use of case studies and models for the purpose of evaluating firm management success.

Prerequisites: AGECE 105 or 3 hours of economics; and junior or senior classification.

AGEC 453 International Agribusiness Marketing *Credits 3. 3 Lecture Hours.*

Basic competencies in international marketing of agri-foods; and market entry, pricing, payment, finance, and promotion.

Prerequisites: AGECE 105 or 3 hours of economics; and junior or senior classification.

AGEC 489/NFSC 489/AGMS 489 Special Topics in... *Credits 1 to 4. 1 to 4 Lecture Hours.*

Selected topics in an identified area of AGECE, AGSM and NFSC. May be repeated for credit.

Prerequisite: Junior or senior classification.refrigeration and insulation, temperature

AGSM 301 Systems Analysis in Agriculture *Credits 3. 3 Lecture Hours.*

Operations research and systems theory applied to management problems in food and agricultural industries; linear programming, queuing theory, simulation and critical path method; provides the knowledge and computer skills to better manage resources for the evolving agricultural industries.

Prerequisites: MATH 141 and MATH 142 with a grade of C or better.

AGSM 315 Food Process Engineering Technology *Credits 3. 2 Lecture Hours. 2 Lab Hours.*

Elementary mechanics, physical and thermal properties of food and processing materials, heat transfer, mass and energy balances, psychrometrics (properties of air), insulation.

Prerequisites: PHYS 201 or PHYS 218, or approval of instructor.

Cross Listing: NFSC 315/AGSM 315.

AGSM 360 Occupational Safety Management *Credits 3. 2 Lecture Hours. 2 Lab Hours.*

Safety considerations in the work environment, including safety mandates, safety mission, personal and business liability, fire, chemical, dust, machine noise, personal protective devices; design and implementation of safety programs.

Prerequisite: Junior or senior classification.

AGSM 473 Project Management for Agricultural Systems Technology *Credits 3. 3 Lecture Hours.*

Development of fundamental skill set in project management; basic knowledge of project management methods, tools and techniques; includes organization and life cycle, management processes, integration management, time management, cost management, quality management, communications management, risk management, procurement management, stakeholder management.

Prerequisites: AGSM 301 and senior classification.

AGSM 484/AGEC 484/NFSC 484 - Internship *Credits 0 to 6. 0 to 6 Other Hours.*

Practical experience working in a professional agricultural and/or food systems management setting. May be taken three times.

Prerequisites: Junior or senior classification; approval of the instructor.

CHEM 119 Fundamentals of Chemistry I *Credits 3. 3 Lecture Hours.*

(CHEM 1311, 1111; 1411*) Fundamentals of Chemistry I. Introduction to modern theories of atomic structure and chemical bonding; chemical reactions; stoichiometry; states of matter; solutions; equilibrium; acids and bases; coordination chemistry.

CHEM 120 Fundamentals of Chemistry II *Credits 3. 3 Lecture Hours.*

(CHEM 1312, 1112; 1412) Fundamentals of Chemistry II. Theory and applications of oxidation-reductions systems; thermodynamics and kinetics; complex equilibria and solubility product; nuclear chemistry; descriptive inorganic and organic chemistry.

ECON 202 Principles of Economics *Credits 3. 3 Lecture Hours.*

(ECON 2302) Principles of Economics. Elementary principles of economics; the economic problem and the price system; theory of demand, theory of production and the firm, theory of supply; the interaction of demand and supply.

ECON 203 Principles of Economics *Credits 3. 3 Lecture Hours.*

(ECON 2301) Principles of Economics. Measurement and determination of national income, employment and price; introduction to monetary and fiscal policy analysis; the effects of government deficits and debt, exchange rates and trade balances.

Prerequisite: [ECON 202](#) or approval of undergraduate advisor.

ENGL 103 Introduction to Rhetoric and Composition *Credits 3. 3 Lecture Hours.*

(ENGL 1301) Introduction to Rhetoric and Composition. Intensive study of and practice in writing processes, from invention and researching to drafting, revising and editing, both individually and corroboratively; emphasis on effective rhetorical choices including audience, purpose, arrangement and style; focus on writing the academic essay as a vehicle for learning, communicating and critical analysis.

ENGL 104 Composition and Rhetoric *Credits 3. 3 Lecture Hours.*

(ENGL 1302) Composition and Rhetoric. Focus on referential and persuasive researched essays through the development of analytical reading ability, critical thinking and library research skills; for freshman and sophomore students only.

ENGL 210 Technical and Business Writing *Credits 3. 3 Lecture Hours.*

(ENGL 2311) Technical and Business Writing. Focus on writing for professional settings; correspondence and researched reports fundamental to the technical and business workplace—memoranda, business letters, research proposals and presentations, use of graphical and document design; emphasis on audience awareness, clarity of communication and collaborative team-work.

MATH 140 Mathematics for Business and Social Sciences *Credits 3. 3 Lecture Hours.*

(MATH 1324) Mathematics for Business and Social Sciences. (3.0). Application of common algebraic functions, including polynomial, exponential, logarithmic and rational, to problems in business, economics and the social sciences; includes mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value. No credit will be given for more than one of [MATH 140](#), [MATH 141](#) and [MATH 166](#).

Prerequisite: High school algebra I and II and geometry.

MATH 141 Finite Mathematics *Credits 3. 3 Lecture Hours.*

Linear equations and applications; systems of linear equations, matrix algebra and applications, linear programming, probability and applications, statistics. No credit will be given for more than one of [MATH 140](#), [MATH 141](#) and [MATH 166](#).

Prerequisites: High school algebra I and II and geometry.

MATH 142 Business Calculus *Credits 3. 3 Lecture Hours.*

(MATH 1325, MATH 1425) Business Calculus. Limits and continuity; techniques and applications of derivatives including curve sketching and optimization; techniques and applications of integrals; emphasis on applications in business, economics, and social sciences. Only one of the following will satisfy the requirements for a degree: [MATH 131](#), [MATH 142](#), [MATH 147](#), [MATH 151](#) and [MATH 171](#).

Prerequisites: [MATH 140](#) or equivalent or acceptable score on Texas A&M University math placement exam.

PHYS 201 College Physics *Credits 4. 3 Lecture Hours. 3 Lab Hours.*

(PHYS 1301 and 1101, 1401) College Physics. Fundamentals of classical mechanics, heat, and sound. Primarily for architecture, education, premedical, pre dental, and preveterinary medical students.

PHYS 202 College Physics *Credits 4. 3 Lecture Hours. 3 Lab Hours.*

(PHYS 1302 and 1102, 1402) College Physics. Continuation of [PHYS 201](#). Fundamentals of classical electricity and light; introduction to contemporary physics.

Prerequisite: [PHYS 201](#).

STAT 302 Statistical Methods *Credits 3. 3 Lecture Hours.*

Intended for undergraduates in the biological sciences. Introduction to concepts of random sampling and statistical inference; estimation and testing hypotheses of means and variances; analysis of variance; regression analysis; chi-square tests. Only one of the following will satisfy the requirements for a degree: [STAT 301](#), [STAT 302](#) or [STAT 303](#).

Prerequisite: [MATH 141](#) or [MATH 166](#) or equivalent; junior or senior classification.