

1212, and at least one of the following: BIOL 3200 or 3400, or permission of instructor. CHEM 3411 and 3412 strongly recommended.

BIOL 4900 *Cullum Lecture Series (Variable)*
A variable-content course with lectures by nationally and internationally known scholars, films and/or panel discussions. Students participate in class discussions and prepare a biological project/term paper that is relevant to the semester's topic. Normally offered spring. *Prerequisite(s): BIOL 1102 or 1108 with a C or better.*

BIOL 4950 *Selected Topics (Variable)*
Designed to treat areas of biology not in the normal curriculum. These courses may include Animal Behavior, Economic Botany, Introduction to Toxicology, Introductory Araneology, Neurobiology, Phycology, Plant Physiology, Principles of Human Physiology, Techniques in Biology and Wildlife and Fisheries Techniques. *Prerequisite(s): BIOL 1108 with a C or better or permission of instructor.*

BIOL 4980 *Seminar (1-0-1)*
The investigation of current topics in biology with students giving presentations and leading discussions. Normally offered fall and spring. *Prerequisite(s): BIOL 1108; 18 additional hours of biological science with a C or better.*

BIOL 4990 *Undergraduate Research (Variable)*
An introduction to research problems. No more than 3 hours may be counted toward the major. Normally offered each semester. *Prerequisite(s): BIOL 1108 with a C or better and permission of instructor; 18 additional hours of biological science with a C or better.*

BUSA - Business Administration Courses

Note: in order to enroll in any BUSA course numbered 3000-4950, a student must be accepted into the College of Business Administration (see p. 192) and meet the listed prerequisites for the class.

BUSA 4200 *International Business (3-0-3)*
This course covers all aspects of international business including, but not limited to international politics, culture, economics, finance, technology, marketing, ethical decision-making, strategic planning and management, and human resource development in a global environment. *Prerequisite(s): MGMT 3500 and MKTG 3700, with grades of C or better.*

BUSA 4210 *Business Law (3-0-3)*
Contracts, sales contracts, agency negotiable instruments, common and public carriers. Designed to acquaint students with legal rights and liabilities in the ordinary course of business. *Prerequisite(s): 50 semester hours.*

BUSA 4950 *Selected Topics in Business Administration (3-0-3)*
A course and/or directed study of a major issue, practice, or problem in the area of business administration. Content to be decided based on needs and professional objectives of students and the experience and availability of faculty. *Prerequisite(s): permission of advisor to use the course in the area of the major and senior standing.*

BUSA 6950 *Selected Topics in Business Administration (3-0-3)*
A variable content course individually designed to meet the needs, interests, and professional objectives of students in the MBA Program. *Prerequisite(s): Graduate (MBA) student status.*

CHEM - Chemistry Courses

CHEM 1151 *Survey of Chemistry I (3-2-4)*
First course designed for pre-allied health students and non-majors; includes elements, compounds, stoichiometry, solutions, equilibrium, acid-base and nomenclature. Credit may not be earned for both CHEM 1151 and CHEM 1211 or 1212. *Prerequisite(s): MATH 1111 or 1101.*

CHEM 1211 *Principles of Chemistry I (3-3-4)*
First course in a sequence designed for science majors; topics include composition of matter, stoichiometry, periodic relations, gas laws, molecular geometry and nomenclature. Credit may not be earned for both CHEM 1151 and CHEM 1211. *Prerequisite(s): MATH 1111 or 1101 (C or better).*

CHEM 1212 *Principles of Chemistry II (3-3-4)*
Second course in a sequence for science majors; topics include solutions, acid-base, colligative properties, equilibrium, electrochemistry, kinetics, and descriptive chemistry. Credit may not be earned for both CHEM 1151 and CHEM 1212. *Prerequisite(s): MATH 1113 and CHEM 1211 (C or better in each).*

CHEM 1950 *Selected Topics: (V)*
Concepts/topics in special areas of chemistry. May be repeated for credit. *Prerequisite(s): Permission of the instructor.*

CHEM 2410 *Chemistry of Organic and Biomolecules (3-3-4)*
A systematic examination of the properties and reactions of the major classes of organic compounds and their relevance to the metabolic roles of carbohydrates, lipids and proteins. Modern spectroscopic methods of structure determination will be included. *Prerequisite(s): CHEM 1211, 1212 (C or better in each).*

CHEM 2810 *Quantitative Analysis (2-6-4)*
Theories, principles and practice of volumetric, gravimetric and elementary instrumental analysis. *Prerequisite(s): CHEM 1212 (C or better).*

CHEM 2950 *Selected Topics (V)*
Concepts/topics in special areas of chemistry. May be repeated for credit. *Prerequisite(s): Permission of the instructor.*

CHEM 3411 *Organic Chemistry I (3-3-4)*
A study of the structure, nomenclature, properties, and reactivity of organic compounds with an emphasis on modern electronic and mechanistic theories. Spectroscopy will be introduced. The laboratory portion will explore common reactions and laboratory techniques. *Prerequisite(s): CHEM 1212 (C or better).*

CHEM 3412 *Organic Chemistry II (3-3-4)*
A continuation of Organic Chemistry I. Mechanisms, synthesis, and spectroscopy will be emphasized. *Prerequisite(s): CHEM 3411 (C or better).*

CHEM 3721 *Physical Chemistry I (3-3-4)*
A study of gases, first, second, and third laws of thermodynamics, thermochemistry, and chemical equilibria, followed by an introduction to the basic principles of chemical kinetics. *Prerequisite(s): PHYS 1112 or 2212 and MATH 2011 (C or better in each;)* *Corequisites: CHEM 2810 (C or better), permission of the instructor.*

CHEM 3722 *Physical Chemistry II (3-3-4)*
Further applications of chemical kinetics. The principles of quantum mechanics, approximation methods, theory of chemical bonding, symmetry and optical spectroscopy. *Prerequisite(s): CHEM 3721 and MATH 3020 (C or better in each) or permission of the instructor.*

CHEM 3810 *Advanced Organic Chemistry (3-3-4)*
A detailed theoretical and practical examination of mass spectrometry, infrared spectroscopy, and nuclear magnetic resonance spectroscopy (including multinuclear and multidimensional techniques), synthesis and properties of Polymeric materials, and selected advanced organic chemistry topics. Laboratory experiments will introduce advanced topics and techniques and incorporate hands-on MS, IR, and NMR analysis. *Prerequisites: CHEM 3412 (C or better)*

CHEM 3820 *Laboratory Management and Safety (1-3-2)*
Formal instruction and practical experience in all phases of assisting with instructional laboratories. Safety instruction includes proper use of protective equipment and fire extinguishers, and CPR training. *Prerequisite(s): CHEM 2410 or CHEM 3411 (C or better), or permission of instructor.*

CHEM 3950 *Selected Topics (V)*
Concepts/topics in special areas of chemistry. May be repeated for credit. *Prerequisite(s): Permission of the instructor.*

CHEM 4210 *Advanced Inorganic Chemistry (3-0-3)*
A study of advanced topics in inorganic chemistry including molecular orbital theory, coordination chemistry, descriptive chemistry of the elements, atomic structure and nuclear chemistry. *Prerequisite(s): CHEM 1212 (C or better; CHEM 3412 recommended).*

CHEM 4551 *Biochemistry I: Physical Biochemistry (3-3-4)*
The physical chemistry of macromolecules. An examination of the chemical behavior of amino acids, proteins, lipids, carbohydrates, and nucleic acids, emphasizing the relationship between structure and physiological function. *Prerequisite(s): CHEM 1212 and 3412; MATH 2011 or 1220 (C or better in each).*

CHEM 4552 *Biochemistry II: Bioenergetics and Metabolism (3-0-3)*
A study of the metabolism of carbohydrates, lipids, amino acids, nucleotides, and related compounds; the regulation and energetic of the metabolic pathways; and oxidative and photophosphorylation. *Prerequisite(s): CHEM 4551 (C or better) or permission of the instructor.*

CHEM 4830 *Principles of Instrument Design (2-3-3)*
A study of instruments including signal transducers, signal conditioning, and computer data logging. Logic gates, digital control, counters, analog-to-digital conversion and spectroscopic techniques will be discussed as needed. *Prerequisite(s): CHEM 2810*

or *PHYS 3011; and PHYS 1112 or 2212; (C or better in each) or permission of the instructor.*

CHEM 4840 *Instrumental Analysis (3-3-4)*
Theories and applications of instrumental methods of analysis. Spectroscopic techniques (including atomic absorption, ultraviolet/visible, infrared, and fluorescence spectroscopy), separations and electrochemistry will be discussed. *Prerequisite(s): CHEM 2810, CHEM 3412 (C or better in each).*

CHEM 4900 *Cullum Lecture Series (V, 1 to 5)*
Students will hear lectures by nationally and internationally known scholars with expertise in the topic chosen for each spring term, will attend films and/or panel discussions and will submit written assignments. *Prerequisite(s): Permission of the instructor.*

CHEM 4950 *Selected Topics (V)*
Concepts/topics in special areas of chemistry. May be repeated for credit. *Prerequisite(s): Permission of the instructor.*

CHEM 4960 *Undergraduate Internship (V, 1 to 15)*
An internship is a service-learning experience based in an institution or agency, emphasizing the completion of a specific task and the acquisition of specific knowledge and skills under the supervision of Augusta State University and the cooperating institution or agency. *Prerequisite(s): Permission of the instructor.*

CHEM 4990 *Undergraduate Research (V)*
Individual modern chemical research. A minimum of three hours of laboratory work per week for each semester hour of credit. Report/thesis required. May be repeated for credit. *Prerequisite(s): Permission of the instructor.*

COMC - Communication Courses

COMC 2010 *Communications and Culture (3-0-3)*
A study of the history, organization, politics, economics, control, regulation, and effects of the mass media and affiliated industries, particularly in the United States. Issues of influence on the media by, as well as media influence on, government, politics, industry, society, culture, international relations, and the audience are addressed through discussion, reading, and writing-intensive assignments. *Prerequisite(s): ENGL 1101- 1102 or ENGL 1113-1114 and HUM 2001, with a grade of C or better in each.*

COMC 3000 *Media Law and Ethics (3-0-3)*
A broad application of the principles of law and ethics to the mass communications media, media practice, advertising, freedom of information, libel, contempt of court, copyright, private and self/professional censorship. Required for all communications majors except for those following the drama track. *Prerequisite(s): COMC 2010 or permission of the instructor.*

COMC 3100 *Communications for Professionals (3-0-3)*
A skill-building course in various forms of professional oral and written communication. Included are business memo and letter writing, short report writing, informal and