CHEM: CHEMISTRY

CHEM 1010 Chemistry for World Citizens **3-2-4**

A chemistry course with a focus on real-world societal issues. Students will develop critical thinking skills and an appreciation for the theoretical and practical aspects of chemistry while learning the fundamentals of chemistry. Chemical knowledge will be developed on a need-to-know basis in decision making activities. The course is designed for non-science majors seeking a laboratory science course.

CHEM 1151K Survey of Chemistry I **3-2-4**

A study of the fundamental principles of chemistry emphasizing modern atomic theory, the structure and behavior of atoms, the properties and states of matter, energy relations, periodicity and mole concepts. Laboratory experiments supplement the study of the listed topics.

CHEM 1152K Survey of Chemistry II **3-2-4**

Prerequisite: CHEM 1151K with a grade of C or better. A study of the properties, preparation, and reactions of organic compounds in light of modern theories of molecular structure. An overview of the chemistry of living systems including the structure of biological molecules, metabolism, and molecular genetics. Laboratory experiments supplement the study of the listed topics.

CHEM 1211K Principles of Chemistry I **3-3-4**

Prerequisite or Corequisite: MATH 1111 or 1113. An introduction to a quantitative study of the physical and chemical behavior of matter in its several phases and a consideration of modern theories of bonding forces at the molecular level. Chemical nomenclature, the gaseous state, properties of solutions and reaction kinetics are discussed.

CHEM 1212K Principles of Chemistry II **3-3-4**

Prerequisites: MATH 1111 or 1113 and CHEM 1211K with a grade of C or better. A continuation of the quantitative study of the physical and chemical behavior of matter in its several phases and a consideration of modern theories of bonding forces at the molecular level. Chemical equilibrium, oxidation-reduction and acid-base chemistry, electrochemistry, chemical thermodynamics and the descriptive chemistry of selected elements and their compounds are discussed.

CHEM 2310 Quantitative Analysis **3-3-4**

Prerequisite: CHEM 1212K with a grade of C or better. A study of techniques of quantitative analysis, involving volumetric, gravimetric, and instrumental methods. Theory underlying the experimental techniques, methods of recording and statistically evaluating data and calculations utilizing the data are considered. The methods discussed are applied in the laboratory to determine certain constituents in several samples.

CHEM 3401 Organic Chemistry I **3-4-4**

Prerequisite: CHEM 1212K with a grade of C or better. A study of the structure, properties, preparation and reactions of organic compounds in light of modern theories of molecular structure and reaction mechanisms.

CHEM 3402 Organic Chemistry II **3-4-4**

Prerequisite: CHEM 3401 with a grade of C or better. Continuation of CHEM 3401 with emphasis on spectroscopy, organic synthesis, and reaction mechanisms.

CHEM 3601 Biochemistry I **3-0-3**

Prerequisites: CHEM 3401 and CHEM 3402 with a grade of C or better and an introductory biology course. Principles of the structure and function of biological molecules including carbohydrates, lipids, proteins, membranes, enzymes and nucleic acids. An overview of the major metabolic and biosynthetic pathways is also presented.

CHEM 3601L Laboratory Techniques in Biochemistry **1-3-2**

Corequisite or prerequisite: CHEM 3601. Experiments to illustrate the principles and research techniques in biochemistry and molecular biology.

CHEM 3602 Biochemistry II **3-0-3**

Prerequisite: CHEM 3601 with a grade of C or better. A continuation of CHEM 3601. Comprehensive discussion of regulatory, metabolic and biosynthetic pathways, advanced enzyme kinetics, regulation of gene expression and recombinant DNA technology.

CHEM 3801 Physical Chemistry I **3-0-3**

Prerequisites: CHEM 3402, MATH 2262, and PHYS 2212K with a grade of C or better. A theoretical and mathematical treatment of the fundamental theories and laws of chemistry with an emphasis on thermodynamics.

CHEM 3802 Physical Chemistry II **3-0-3**

Prerequisite: CHEM 3801. Corequisite: CHEM 3802L. A theoretical and mathematical treatment of the fundamental theories and laws of chemistry with an emphasis on quantum mechanics, kinetics, and statistical mechanics.

CHEM 3802L Physical Chemistry Laboratory **0-5-1**

Corequisite: CHEM 3802. Experimental investigations which supplement the study of thermodynamics, kinetics, quantum mechanics, and statistical mechanics as applied to systems of interest to chemists.

CHEM 4210 Seminar **1-0-1**

Prerequisite: Senior standing and completion of at least 15 hours of upper division chemistry courses. Discussion of and reports on current topics in chemistry. Demonstrated comprehension of topic, knowledge of pertinent literature and competence in communication skills, both oral and written, will be considered in assigning a course grade. Required of majors during the senior year. One meeting per week.

CHEM 4310 Instrumental Analysis **2-6-4**

Prerequisites: CHEM 2310, CHEM 3802, CHEM 3802L. A study of the advantages and the limitations of the use of instruments for the solution of problems in chemical analysis. The physical and chemical processes, instrumentation, and data analysis techniques as applied to mass spectrometry, optical spectroscopy, nuclear magnetic resonance spectroscopy, separations science, electrochemistry, radiochemical analysis, surface analysis, and thermal analysis will be discussed in lecture and utilized in laboratory.

CHEM 4420 Physical Organic Chemistry **3-0-3**

Prerequisites: CHEM 3402 and CHEM 3802L. A study of the methods used to elucidate organic reaction mechanisms. Topics covered include: reaction kinetics, isotope effects; linear free energy relationships; general acid and base catalysis and the acidity functions; reactive intermediates including free radicals, carbenes, carbanions, and carbocations; symmetry controlled reactions; photochemistry.

CHEM 4510 Advanced Inorganic Chemistry **3-3-4**

Prerequisites: CHEM 3801, CHEM 3802, CHEM 3802L with a grade of C or better. An advanced course concentrating on specific aspects of inorganic chemistry including discussions of atomic and molecular structure, chemical bonding, isomerism, coordination compounds and descriptive chemistry of selected elements. Three lectures and one three-hour laboratory per week.

CHEM 4810 Computational Chemistry **0-6-2**

Prerequisites: CHEM 3802, CHEM 3802L. Computational and modeling software will be introduced through projects involving systems in physical chemistry and spectroscopy as well as organic chemistry, inorganic chemistry, and biochemistry. Computational predictions will be correlated with laboratory experiments.

CHEM 4910 Laboratory Problems **0-4-1 to 0-12-3**

Prerequisite: Consent of the instructor and approval of the Department Head. Experimental work in analytical, inorganic, organic, physical or biochemistry. The student should have completed at least one semester of a background course in the appropriate area in order for the research to be of an advanced nature at the undergraduate level. Although it is not possible to predict the exact time required for a research project, a student should expect to spend at least four hours per week for each credit hour awarded in this course. A report, in a format suitable for presentation to a chemical journal, shall be presented before credit is awarded.

CHEM 4920 Special Topics **1-0-1 to 3-0-3**

Prerequisite: Consent of the instructor and approval of the Department Head. Topics and credit to be assigned. May be taken more than once if topics are different.

CIED: CURRICULUM AND INSTRUCTION

CIED 1000 Essential Study Skills **2-0-2**

Institutional credit, for Freshmen only. The application of reading and study strategies to academic courses and personal learning styles. Required of all second quarter Freshmen Education majors placed on academic warning.

CIED 2000 Survey of Educational Concepts **3-0-3**

An introduction to the concepts, practices, and issues of the teaching profession and the public schools.

CISM: COMPUTER INFORMATION SYSTEMS MANAGEMENT

CISM 2201 Fundamentals of Computer Applications **3-0-3**
The fundamentals of how microcomputers and local area networks are used in business. Topics include both hardware and software, with an emphasis on application software. Packages include word-processing, presentation software, internet, spreadsheets, and electronic mail.

CISM 3450 Management Information Systems **3-0-3**
Prerequisites: CISM 2201 and MGNT 3250. Information processing, meaning and role of information systems, information systems procedures, business functions of computers, introduction to systems analysis and design, files and databases, office automation, data communication, behavioral and organizational implications, selection of hardware and software.

CISM 4310 Systems Software for Business **3-0-3**
Prerequisites: ACCT 4410 or CISM 3450. Evaluation of characteristics and features of a number of systems software packages as they relate to the needs of a variety of business environments.

CISM 4320 Planning and Implementing Local Area Networks **3-0-3**
Prerequisites: ACCT 4410 or CISM 3450. Design, acquisition, and installation of local area networks.

CISM 4330 Planning and Implementing Wide Area Networks **3-0-3**
Prerequisites: ACCT 4410 or CISM 3450. Design, acquisition, and installation of wide area networks.

CISM 4340 Management of Electronic Networks **3-0-3**
Prerequisites: ACCT 4410 or CISM 3450. Managing and upgrading local area and wide-area networks.

CISM 4350 Management of Information Technology Projects **3-0-3**
Prerequisites: ACCT 4410 or CISM 3450. Methodologies and infrastructures used by departmental managers to cope with the organizational, human resource, and technological issues involved in management of information technology projects.

COMD: COMMUNICATION DISORDERS

COMD 3010 Introduction to Communication Disorders **3-0-3**
Prerequisites: Admission to Teacher Education and Communication Disorders Program. An introduction to communication disorders. Terminology, etiology and management procedures required in the practice of Speech-Language Pathology are emphasized. Public school observation/participation is required.

COMD 3020 Introduction to Audiology **3-0-3**
An introduction to basic auditory tests and related psychophysical procedures. Emphasis is placed on audiometric measurement and interpretation.

COMD 3030 Anatomy & Physiology of the Hearing Mechanism **2-0-2**
The study of the anatomy and physiology of the hearing mechanism.

COMD 3040 Applied Phonetics **3-0-3**

Co-requisite: COMD 3050. Principles of phonetics and their application to typical speech production . Emphasis is placed on skill development in the use of the International Phonetic Alphabet (IPA) and diacritic markers.

COMD 3050 Phonetics Lab **0-2-1**

Co-requisite: COMD 3040. A supervised laboratory application of IPA transcription skills.

COMD 3060 Anatomy & Physiology of the Speech Mechanism **3-0-3**

Prerequisite: COMD 3010. The study of anatomy and physiology of the head, neck and trunk relevant to speech production.

COMD 3070 Normal Language Acquisition **3-0-3**

An initial study of language acquisition focusing on the sequence and process of typical development in children. Topics include theories of language development, acquisition sequence of the major components of language, variables affecting language acquisition, and clinical application. Open to non-majors.

COMD 3080 Introduction to Neurology in Communication Disorders **3-0-3**

Prerequisites: COMD 3010. Co-requisite: COMD 3060. An introduction to the anatomy and physiology of the nervous system as it relates to speech and language functions.

COMD 3090 Professional Practices in Communication Disorders **2-0-2**

Prerequisites: COMD 3010, COMD 3040, COMD 3050. An introduction to the process, practices, roles, responsibilities and working site opportunities for the Speech-Language Pathologist.

COMD 4010 Manual Communication **3-0-3**

An introduction to manual communication. Emphasis is placed on skill development in the use of American Sign Language. Open as an elective to all undergraduate majors.

COMD 4020 Speech Science **3-0-3**

Prerequisites: COMD 3030 , COMD 3060, COMD 3080. Co-requisite: COMD 4030. An introduction to the normal processes of communication; the intensification and prolongation of sound, the psychoacoustics of speech sound production and perception; and theories of normal speech production and perception.

COMD 4030 Speech Science Laboratory **0-2-1**

Co-requisite: COMD 4020. A laboratory application of the research and scientific tools commonly used in speech science.

COMD 4040 Introduction to Articulation Disorders **3-0-3**

Prerequisites: COMD 3040, COMD 3050, COMD 3070. Co-requisite: COMD 4050, SPEC 4020. An introduction to the normal process of speech acquisition and development; theories of speech acquisition and types of disorders of articulation and phonology. Emphasis is placed on the diagnosis and treatment of children with articulation and phonological disorders.

COMD 4050 Observation **0-4-2**

Prerequisites: COMD 3040, COMD 3070. Co-requisites: SPEC 4020. Supervised video-based observation of speech and language diagnosis and therapy with children and adults with speech/language disorders. Students obtain a minimum of 25 hours of direct observation for ASHA requirements.

COMD 4060 Introduction to Oro-Facial/Laryngeal Disorders 3-0-3
Prerequisites: COMD 4020. An overview of two common areas of organic disorders of oral communication. Introduction to the communication parameters of oro-facial disorders with special emphasis on cleft lip and palate and communication aspects of voice disorders.

COMD 4070 Introduction to Fluency Disorders 3-0-3
Prerequisite: COMD 4040. Provides basic information on the characteristics and nature of stuttering and causal theories.

COMD 4080 Introduction to and Analysis of Language Disorders 4-0-4
Prerequisites: COMD 3070, COMD 4040. An initial study of the identification of varying types of language disorders. Emphasis is placed on language sampling procedures and analysis.

COMD 4090 Speech & Language for the Hearing Impaired 2-0-2
Prerequisites: COMD 3020, COMD 3030, COMD 3070. Application of speech and language therapy principles to the management of hearing impaired children (infants through school age).

COMD 4100 Seminar in Central Auditory Disorders 1-0-1
Prerequisites: COMD 3020, COMD 3030, COMD 3080. Special attention will be given to the contribution of the auditory component in disorders of attention and academic learning. The focus is on learning factors of school age children.

COMD 4150 Directed study 0-0-1 to 0-0-3
Prerequisites: At least Junior standing; permission of advisor, instructor, and Department Head. A maximum of 3 hours per semester, not exceeding a total of 9 semester hours within the program. Study in area or subject not normally found in established courses offered by the department; may also allow students to explore in more detail and/or depth an area or subject covered by the department in communication disorders.

COMM: COMMUNICATION ARTS

COMM 1100 Human Communication 3-0-3
A broad approach to oral communication skills including intrapersonal, interpersonal, small group, and public speaking.

COMM 1110 Public Speaking 3-0-3
The organization of materials and the vocal and physical aspects of delivery in various speaking situations.

COMM 2060 Business and Professional Speech 3-0-3
Dyadic, small group, and public communication in situations found in business and professional settings.

COMM 2100 Introduction to Communication Theory 3-0-3
General survey of communication theories to familiarize students with basis constructs in interpersonal, intercultural, organizational, and public communication; to demonstrate the value of theory; and to orient students to the Speech Communication major.

COMM 2500 Fundamentals of Intercultural Communication 3-0-3
A study of how culture shapes language and the impact of language differences on communication between persons with different cultural backgrounds.

COMM 3010 Oral Interpretation 2-0-2
An introduction to the fundamentals of performance-based activities in oral interpretation emphasizing group, choral, and solo readings. Open as an elective to all undergraduate majors.

COMM 3060 Persuasion 3-0-3
Prerequisites: COMM 1110 and COMM 2100. Theories of persuasion.

COMM 3071 Argumentation and Debate 3-0-3
Theory and application of argumentation.

COMM 3072 Debate Lab 0-2-1
Pre- or Co-requisite: COMM 3071. Research and practice on current national debate topics. May be repeated.

COMM 3090 Public Speaking Lab 0-2-1
Prerequisite: COMM 1110. Research and practice in individual presentations.

COMM 3200 Contemporary Public Relations 3-0-3
Prerequisites: COMM 1110 and BVED 2400. The first course in public relations, dealing with concepts of communicating with various publics.

COMM 3210 Public Relations Applications 3-0-3
Prerequisite: COMM 3200. An introduction to computer applications in the practice of public relations including page layout, online computer services, and campaigns.

COMM 3220 Public Relations Writing 3-0-3
Prerequisite: COMM 3200. The study of writing techniques and formats for public relations applications, including radio and television public service announcements, video news releases, speech writing, media kit preparation, and print media news releases.

COMM 3230 Public Relations Practicum 0-2-1
Prerequisites: COMM 3200 and COMM 3210. Skill building in Public Relations techniques. May be repeated.

COMM 3300 Interpersonal Communication 3-0-3
Prerequisite: COMM 1110 and COMM 2100. The study of communication skills in interpersonal relationships.

COMM 3310 Listening 2-0-2
Prerequisites: **COMM 3300.** Study of and skill development in different types of listening.

COMM 3320 Nonverbal Communication 3-0-3
Prerequisites: **COMM 3300.** Study of types and functions of nonverbal communication.

COMM 3330 Interviewing 2-0-2
Prerequisites: **COMM 3300.** Study of and skill development in interviewing.

COMM 3400 Organizational Communication 3-0-3
Prerequisite: **COMM 1110 and COMM 2100.** Communication structures and processes in organizations.

COMM 3410 Conflict Management and Leadership 3-0-3
Prerequisite: COMM 3300. Strategies of managing conflicts in organizations and the role of leadership style in negotiations.

COMM 3500 Fundamentals of Cross-cultural Communication 3-0-3
Causes of cross-cultural communication conflicts and strategies for improvement.

COMM 3600 Directed Study in Communication Arts 1-0-1 to 3-0-3
Individual instruction for enrichment of advanced majors in their areas of specialization.

COMM 4110 Contemporary Communication Theory 3-0-3
Prerequisites: COMM 3300 or 3071. Communication theory with an emphasis on social bases and social variables.

COMM 4120 Classical Theories of Communication 3-0-3
Prerequisite: COMM 3300. Survey of communication theory from classical time to Edwin Black.

COMM 4130 The Psychology and Semiotics of Communication 3-0-3
Prerequisite: COMM 3300. Origin and purpose of speech, basic psychological principles and language, and the use of propaganda.

COMM 4170 Theories of Public Communication 3-0-3
Prerequisite: COMM 4120. Study of rhetorical theory with an emphasis on significant speakers and speeches in the United States. Includes the social origins of the speeches, the nature of the issues discussed, and the consequences of the speaker's activities.

COMM 4200 Public Relations Techniques 3-0-3
Prerequisites: COMM 3200 and COMM 3220. The theory and practice of public relations.

COMM 4220 Communication and the Consumer 3-0-3
Prerequisites: **COMM 3200.** Theory and practice of consumer-directed communication.

COMM 4240 Advanced Public Relations Practices 3-0-3
Prerequisites: COMM 4200, COM 3210, and either JOUR 3410 or JOUR 4000. Planning, executing and evaluating public relation campaigns.

COMM 4310 Small Group Communication 3-0-3
Prerequisite: COMM 3300. The theory and practice of small group communication.

COMM 4340 Advanced Interpersonal Communication 3-0-3
Prerequisite: COMM 3300. The science and art of communication in close relationships.

COMM 4400 Organizational Presentation 3-0-3
Prerequisite: COMM 3400. The study of advanced preparation and presentation techniques in organizations. This course will focus on the practice and understanding of professional presentations using advanced visual aids, the delivery of research reports, and the formulation of extended speeches.

COMM 4410 Communication Research Methods 3-0-3

Prerequisite: COMM 3400. The study of research methods used to investigate communication. This course will focus on the implementation, analysis, and interpretation of measures used to examine communication phenomena within organizations including communication audits, network analysis, and content analysis.

COMM 4420 Advanced Organizational Communication 3-0-3

Prerequisites: COMM 3400, COMM 3300, and COMM 4410. Communication processes and characteristics in formal organizations. Alternative theoretical perspectives and research methods to analyze communication in organizational settings.

COMM 4600 Special Topics in Speech Communication 1-0-1 to 3-0-3

The study of specific genres of public communication, e.g. black rhetoric, social protest, political campaign communication, pulpit speaking, public relations communication, etc. May be repeated for credit if different topics are discussed.

COMM 4610 Portfolio and Resume Presentation 1-0-1

Prerequisite: senior standing. Assembly and presentation of a portfolio and resume acceptable for professional use in the student's area of emphasis.

COMM 4670 Internship 3-0-3 to 9-0-9

Prerequisite: Senior standing and major in appropriate specialization. The placement of students in apprentice and intern positions in professional environments including business, theatre, and the telecommunication industry to enlarge the student's professionalism. Satisfactory or unsatisfactory grade.

COMM 4700 Film as Public Discourse 3-0-3

History of film and its place in the public sphere, its role in public persuasion, and the study of film theorists.

COOP: COOPERATIVE EDUCATION

COOP 1101 Introduction to Cooperative Education 2-0-2

Students will learn how to set personal and career goals, develop effective resumes and cover letters, and to develop effective interviewing skills. Students will be encouraged to put these skills to use by obtaining Co-op, internship, and/or summer employment. Emphasis will also be placed on development of measurable performance objectives to be used in the Co-op work placement. COOP 1101 is a prerequisite to participation in the Cooperative Education Program.

COOP 1102 Evaluation of Co-op Work Experience 1-0-1

Prerequisite COOP 1101 or demonstration of required competencies. Students will enroll in this course during their first semester of Co-op employment. Emphasis will include understanding the legal and ethical requirements of career employment, understanding and internalizing workplace requirements, creation and achievement of measurable performance objectives, and understanding the relationship between academic studies and workplace performance.

COOP 3300 Full-Time Co-op Work Experience **0-0-0**

Prerequisite: COOP 1101 or permission of instructor. Students are placed in full-time Co-op work experiences related to their academic majors and/or career goals. These work experiences must be approved by the students' Co-op Faculty Coordinators. Students and their employers submit written evaluations based on performance objectives. Grading is on an S/U basis.

COOP 3310 Parallel Co-op Work Experience **0-0-0**

Prerequisite: COOP 1101 or permission of instructor. Students are placed in parallel Co-op work experiences must be approved by the students' Co-op Faculty Coordinators. Students and their employers submit written evaluations based on performance objectives. Grading is on an S/U basis.

COOP 4990 Applied Research Project in Co-op Work Experience **3-0-3**

Prerequisites: Senior standing and successful completion of at least 2 semesters of COOP 3300 or at least 4 semesters of COOP 3310. The student, in consultation with the Co-op Faculty Coordinator and the student's Co-op employer, will undertake a major research project directly related to the student's Co-op employment position and major. The student must submit a project prosepctus for approval in advance of enrolling in this course. The completed project will be presented in written form to the Co-op Faculty Coordinator and orally to students or faculty in their major area.

CRJU: CRIMINAL JUSTICE

CRJU 1000 Introduction to Criminal Justice **3-0-3**

An introduction to the structure, functions, and operations of criminal justice agencies, including the police, the courts, and corrections.

CRJU 2100 Survey of Law Enforcement **3-0-3**

Prerequisite: CRJU 1000 or permission of the instructor. An overview of law enforcement in a free society and the relationship of police to the criminal justice system as a whole. History, organization, administration, operations, and selected issues such as community policing are examined.

CRJU 2200 Corrections **3-0-3**

Prerequisite: CRJU 1000 or permission of the instructor. A study of the history, structure, and functions of corrections, and the legal and philosophical basis for the punishment of criminal offenders. Study will include the role of corrections as one of the three major components of the criminal justice system.

CRJU 2300 Judicial Process **3-0-3**

Prerequisite: CRJU 1000 or permission of the instructor. A study of the jurisdiction, policies, and procedures of courts in the administration of criminal justice.

CRJU 3300 Criminal Law **3-0-3**

Prerequisite: CRJU 1000. A study of the source and development of criminal law, its application, interpretation, and enforcement, and an analysis of Supreme Court decisions to emphasize problems in due process.

CRJU 3310 Criminal Procedure **3-0-3**

Prerequisite: CRJU 1000. A study of the nature and function of the law with relation to the criminal process and policies and procedures in the administration of criminal justice. Special attention will be given to United States Supreme Court decisions that govern criminal procedures.

CRJU 3401 Criminal Justice Data Analysis **2-2-3**

Prerequisite: CRJU 1000 or permission of the instructor. An introduction to criminal justice data analysis including the logic of science, operationalization, sampling, coding, data entry, data file management, and microcomputer processing of research information. Computer laboratory periods required.

CRJU 3402 Criminal Justice Research Methods **2-2-3**

Prerequisite: CRJU 1000 and CRJU 3401. An introduction to criminal justice research methodologies with an emphasis on firsthand data collection. Project work introduces students to issues in research design, ethical concerns, conceptualization, sampling, data analysis, interpretation of research results, report writing, and application of research findings. Computer laboratory periods are required.

CRJU 3600 Criminology **3-0-3**

Prerequisite: CRJU 1000. A study of the nature and scope of crime and delinquency in society with an emphasis on criminological theories. Study will include the application of theory as a foundation for conducting research.

CRJU 3700 Ethics in Criminal Justice **3-0-3**

Prerequisite: CRJU 1000. Standards of conduct in law enforcement, the court system, and corrections. An examination of traditional and non-traditional criminal justice practices such as fidelity to office, discretion, covert operations, deadly force, affirmative action, political involvement, sentencing, incarceration, and the death penalty.

CRJU 4010 Comparative Justice Systems **3-0-3**

Prerequisite: Area F Criminal Justice courses or permission of the instructor. A study and comparison of the world's major justice systems.

CRJU 4110 Forensic Criminology **3-0-3**

Prerequisite: Area F Criminal Justice Courses or permission of the instructor. The scientific investigation of crime with emphasis on the collection, analysis, comparison, and identification of physical evidence.

CRJU 4200 Seminar in Corrections **3-0-3**

Prerequisite: CRJU 1000 and CRJU 2200 or permission of the instructor. An in-depth study of laws, policies, and procedures which govern corrections and major contemporary problems and issues in corrections.

CRJU 4400 Seminar in Law Enforcement **3-0-3**

Prerequisite: CRJU 1000 and CRJU 2100 or permission of the instructor. An in-depth study of policies and procedures which govern law enforcement and major contemporary problems in law enforcement.

CRJU 4500 Classification of Criminal Behavior **3-0-3**

Prerequisite: CRJU 1000 or permission of the instructor. A study of the methods of identification and classification of specific criminal behavior types with and emphasis on violent offenders, sexual deviants, the anti-social personality, and the criminally insane.

CRJU 4510 Correctional Therapies **3-0-3**

Prerequisite: CRJU 4500 or permission of the instructor. A study of major rehabilitation therapies used by correctional treatment practitioners who work with offenders and their families to help offenders establish socially acceptable and productive lifestyles.

CRJU 4700 Special Topics in Criminal Justice **3-0-3 to 6-0-6**

Prerequisite: Area F Criminal Justice Courses or permission of instructor. An intensive study of a topic relevant to criminal justice.

CRJU 4720 Juvenile Justice **3-0-3**

Prerequisite: CRJU 1000 or permission of the instructor. An analysis of the juvenile justice system and related processes. Major emphasis will be placed upon the socio-historical development of the Juvenile Justice System, the impact of Supreme Court decision, and the current controversial issues surrounding the Juvenile Justice System.

CRJU 4800 Seminar in Criminal Justice **3-0-3**

Prerequisites: CRJU 3300, CRJU 3310, CRJU 3401, CRJU 3402, CRJU 3600, and CRJU 3700. An application and integration of core an related criminal justice courses to contemporary criminal justice issues.

CRJU 4900 Directed Studies in Criminal Justice **3-0-3 to 6-0-6**

Prerequisite: Criminal Justice major and permission of the students' advisor, the instructor, and the criminal justice coordinator or department head. A study in an area or subject not covered in other criminal justice courses; and, may also allow the student to explore in more detail a topic which is normally covered in criminal justice courses.

CRJU 4910 Internship in Criminal Justice **3-0-3 to 9-0-9**

Prerequisite: major in Criminal Justice; permission of the student's advisor, internship coordinator, and the coordinator of Criminal Justice must be obtained; forms must be completed before registration. Supervised, practical experience in an appropriate criminal justice agency; an opportunity for students to demonstrate maturity and judgment to discover the integration between theory and practice. Graded on a satisfactory/unsatisfactory basis.

CRWR: CREATIVE WRITING

CRWR 3400 Introduction to Creative Writing **3-0-3**

Also offered as ENGL 3400. Prerequisite: ENGL 2110, 2120, 2130, or 2140. An introduction to the stylistic conventions and techniques of poetry and prose. The course also emphasizes techniques of literary invention and offers a brief exposure to the analysis and critique of peer texts.

CRWR 3420 Introduction to Creative Non-Fiction **3-0-3**

Prerequisite: ENGL/CRWR 3400. An introduction to non-fiction writing which employs a variety of literary techniques common in literary journalism and fiction writing. Students will read model texts and further develop workshop and revision techniques in order to produce a carefully revised piece of their own non-fiction.

CRWR 3440 Poetry Writing **3-0-3**

Prerequisite: ENGL/CRWR 3400. A study of poetic technique beyond the fundamentals introduced in ENGL/CRWR 3400. The course emphasizes prosody and poetic forms, both prescribed and organic. Students receive further training in workshop techniques via the analysis of poems produced by members of the class.

CRWR 3460 Fiction Writing **3-0-3**

Prerequisite: ENGL/CRWR 3400. A craft-oriented course devoted to the genre of the modern short story. Students will study classic stories by writers such as Chekhov, Maupassant, O'Connor, and more recent award-winning writers as well as undertaking exercises in technique and producing at least two stories of their own.

CRWR 4410 Studies in Prosody and Poetic Form **3-0-3**

Also offered as ENGL 4410. Prerequisite or corequisite: ENGL 3060. A study of the historical and formal developments of poetry. The course will emphasize 20th-century American poetry, covering principle schools and understanding their relationships.

CRWR 4420 Studies in Narratology **3-0-3**

Also offered as ENGL 4420. Prerequisite or corequisite: ENGL 3060. A study of the international history of narrative forms, storytelling methods, and varieties of representation. Students will study the various conventions and strategies which inform fables, fairy tales, parables, folktales, and the longer works which evolved from them.

CRWR 4440 Advanced Poetry Writing **3-0-3**

Prerequisite: CRWR 3440. A workshop-intensive course emphasizing technical analysis of poems produced by members of the class. The course also emphasizes the application of various aesthetic theories, and students will articulate their own poetics.

CRWR 4460 Advanced Fiction Writing **3-0-3**

A workshop-intensive course in fiction writing. Students will produce their own work and study narrative alternatives and storytelling strategies. Students will also read book-length story collections and/or novels and write stylistic analyses of a major contemporary writer.

CS: COMPUTER SCIENCE

CS 1000 Introduction to Microcomputers and Applications **3-0-3**

Computing technology and concepts; applications of personal computers. Topics include hardware and software terminology, word processing, spreadsheets, e-mail, the Internet, the microcomputer's operating system and its use, ethics, and current trends in the use of computers. A hands-on laboratory is integrated with the course. ***A student may not receive credit for both CS 1000 and CS 1010.***

CS 1010 Introduction to Computer Information Systems **3-0-3**

The computer as a personal productivity tool and typical applications of microcomputers; introduction to programming as a component of the software life cycle, stressing analysis and execution of existing computer programs as well as the use of an interactive development and debugging environment. Word processing and electronic spreadsheets. The Internet and e-mail. The program-development system for a particular programming language. A hands-on laboratory is integrated with the course. ***A student may not receive credit for both CS 1000 and CS 1010.***

CS 1301 Principles of Programming I **4-0-4**

Prerequisite: MATH 1101 or 1111. Programming-language syntax and semantics; problem solving; algorithm design and implementation using modern programming paradigms and techniques; data types and elementary data structures. This course involves extensive programming activities.

CS 1302 Principles of Programming II **4-0-4**

Prerequisite: CS 1301. A continuation of CS 1301 with emphasis on advanced programming structures and techniques. Theory and applications of stacks, queues, and lists; recursion; file processing; introduction to binary trees. This course involves extensive programming activities.

CS 1335 Elementary COBOL Programming **3-0-3**

An introduction to elementary computer programming concepts. Emphasis is on techniques of problem analysis and the development of algorithms and programs. Syntax of the COBOL programming language. The course does not presume previous programming experience.

CS 1338 Elementary FORTRAN Programming **3-0-3**

An introduction to elementary computer programming concepts. Emphasis is on techniques of problem analysis and the development of algorithms and programs. Syntax of the FORTRAN programming language. The course does not presume previous programming experience.

CS 2620 Discrete Structures I **3-0-3**

Prerequisite: MATH 2261. Propositional and predicate logic, mathematical induction, and recursion. Sets, relations, functions. Graphs and trees. Boolean algebra and computer logic. Finite state machines and computability.

CS 3101 Computer Organization **3-0-3**

Prerequisite: CS 1302. An overview of computer organization and design including Boolean algebra, combinational and sequential circuits, data representation, register transfer and microoperations, CPU organization, microprogrammed control, and machine language programming.

CS 3102 Assembly Language **3-0-3**

Prerequisite: CS 3101. A continuation of CS 3101 with emphasis on machine and assembly language instruction and programming techniques, addressing modes, data representations, I/O, and the assembly process.

CS 3300 UNIX and Web Programming **3-0-3**

Prerequisite: CS 1302. The class emphasizes tools that are available in the UNIX environment including: find and grep, sed, and awk, shell programming, HTML, Perl, file security, and Web programming.

CS 3330 The Ada Programming Language **3-0-3**

Prerequisite: CS 1302. Modern programming concepts and techniques using Ada. Program units: subprograms, packages, tasks; data types, statements, and atomic language features; blocks; generics; standard packages and I/O; exception handling.

CS 3335 The C Programming Language **3-0-3**

Prerequisite: CS 1302. Programming using the C programming language. Syntax and semantics of C; information representation; stylistic consideration; the C library. This course also discusses issues relating to the UNIX operating system.

CS 3340 Operating Systems **3-0-3**

Prerequisites: CS 3101 and CS 3410. A survey of operating system structures and services including batch systems, multiprogramming, time-sharing, process scheduling and synchronization, deadlocks, memory management, file-system interfaces and implementations, and secondary storage management.

CS 3410 Data Structures **3-0-3**

Prerequisite: CS 1302. Trees, graphs, and other forms of data structures and their implementations. Emphasizing abstract data types; static memory allocation vs. dynamic storage allocation; searching, hashing, and sorting methods; algorithm analysis.

CS 3520 Algorithms **3-0-3**

Prerequisite: CS 3410. Sequential and parallel algorithms for solving a variety of different problems; paradigms for algorithms; algorithm analysis; NP-complete problems.

CS 4140 Data Communications and Computer Networks **3-0-3**

Prerequisite: CS 3410. Basic concepts of data communications and computer networks architectures: including OSI and TCP/IP models, packet switching, local area and high speed networks. Error control, routing, and transmission media.

CS 4321 Software Engineering I **3-0-3**

Prerequisite: CS 3410. Early stages of the software-development process, with emphasis upon analysis and specification. Also, life-cycle definition, software project management, the computer as a system component, and object-oriented approaches. CASE tools will be used as appropriate.

CS 4322 Software Engineering II **3-0-3**

Prerequisite: CS 3410. (Note that CS 4321 is not a prerequisite). The later stages of the software-development process with emphasis upon design, implementation, verification/ validation, and maintenance. Also, human factors, object-oriented techniques, reliability, and quality-assurance issues.

CS 4330 Theory of Programming Languages **3-0-3**

Prerequisite: CS 3410 or consent of instructor. Formal description of programming languages, standard and advanced features of modern programming languages, complexity.

CS 4335 Principles of Compiler Design **3-0-3**

Prerequisites: CS 3102 and CS 3410. Introduction to programming language structure, lexical analysis, syntax analysis, code generation, and optimization. A large programming project will be required.

CS 4340 Systems Programming **3-0-3**

Prerequisite: CS 3410. Implementation of concepts pertaining to the UNIX environment: process control and interprocess communication, job control, file and directory structures, and client/server processes.

CS 4500 Foundations of Computer Science **3-0-3**

Prerequisites: CS 2620 and CS 3410. Concepts pertaining to regular expressions, finite state machines, regular languages, regular grammars, non regular languages, decidability, context-free grammars, and Turing machines.

CS 4720 Database Design **3-0-3**

Prerequisite: CS 3410. The logical organization of databases: the entity-relationship model; the hierarchical model, network, and relational models. Hardware characteristics; file organization and evaluation. Functional dependencies and normal forms. Query optimization, concurrency control, and distributed database systems.

CS 4820 Artificial Intelligence **3-0-3**

Prerequisites: CS 2620 and CS 3410. Definition of artificial intelligence, Common Lisp, logic programming, search techniques, knowledge representation including schemas and scripts, ART-enterprise as an expert system, and principles of expert systems.

CS 4825 Neural Networks **3-0-3**

Prerequisites: MATH 2150 and MATH 2262. Concepts pertaining to neural networks including: definition of neural intelligence, basic neural computational models, learning: supervised and unsupervised, knowledge bases neural networks, back-propagation neural networks, radial basis neural networks.

CS 4830 Computer Graphics **3-0-3**

Prerequisites: CS 3410 and MATH s2150. A survey of graphics systems and graphics programming. topics include output primitives, transformations and viewing, modeling, user interfaces, and interactive methods. Both 2-D and 3-D concepts are discussed.

CS 4900 Senior Seminar **3-0-3**

Prerequisites: CS 3101, CS 3410, and senior standing. A capstone experience intended primarily for computing majors that combines societal, ethical, and legal implications and trends of computing with the development of research and communication skills for the profession. Topics include societal effects of computing, ethics in the field, legal issues, professional literature and organizations, current industrial, social, legal, governmental, and technical developments, research methodology, and career opportunities. Involves extensive reading and writing (both technical and non-technical), as well as library research, prepared group discussions, and oral presentations.

CS 4950 Directed Study in Computer Science **Variable**

Prerequisite: Consent of instructor. The student will undertake at least one major computer-science project under the supervision of the instructor. Credit will be assigned on the basis of the effort required by the project. May be taken more than once if topics are different.

CS 4990 Topics in Computer Science **Variable**

Prerequisite: Consent of instructor. Topics to be assigned. May be taken more than once if topics are different.

DANC: DANCE

DANC 1500 Introduction to Dance **3-0-3**

A general survey and appreciation of dance as an art form, an introduction to dance history and a critical evaluation of dance.

DANC 1600 Ballet I **1-2-2**

Basic techniques and theories of classical ballet. Emphasizes body placement, awareness, strength, stretch, and terminology. May be repeated for credit.

DANC 1700 Modern Dance I **1-2-2**

Basic modern dance techniques and theories. May be repeated for credit.

DANC 1900 Tap Dance I **1-2-2**

Basic skills in tap dancing. May be repeated for credit.

DANC 2600 Ballet II **1-2-2**

Prerequisite: DANC 1600 or approval of department head. A continuation of Ballet I (DANC 1600). May be repeated for credit.

DANC 2700 Modern Dance II **1-2-2**

Prerequisite: DANC 1700 or approval of department head. A continuation of Modern I (DANC 2600). May be repeated for credit.

DANC 2800 Jazz Dance I **1-2-2**

Basic jazz dance techniques and theories. May be repeated for credit.

DANC 2900 Tap Dance II **1-2-2**

Prerequisite: DANC 1900. A continuation of Tap Dance I (DANC 1900). May be repeated for credit.

DANC 2910 Social Dance **0-2-1**

Introduction to history, terms, positions and movements. Psychomotor instruction in social dance forms from the turn of the century to the present.

DANC 2920 Dance Improvisation **0-2-1**

An introduction to dance improvisation. Movement studies will be based on modern dance techniques and theories.

DANC 3000 Dance Composition **1-2-2**

Prerequisite: DANC 1600 or DANC 1700, or approval of department head. The study of the tools of dance composition, creating individual and group studies, and solving dance composition problems.

DANC 3100 Choreography **1-2-2**

Prerequisite: DANC 3000 or approval of department head. An application of the fundamentals of dance composition to choreographic projects. Emphasis will also be placed on exploring, analyzing, and experimenting with problems in dance performance and production.

DANC 3200 Dance Ensemble **0-4-2**

Prerequisite: Audition by instructor. A select ensemble emphasizing group and solo performance. May be repeated for credit.

DANC 3300 Special Topics in Dance **0-4-2**

Prerequisite: Approval of department head. Practicum based on the dance and movement requirements of specific stage performances produced by the University. Students in the course will perform choreographic works or movement studies. May be repeated for credit.

DANC 3400 Rhythmic and Recreational Dance **1-2-2**

History and methods of teaching ballroom and square dancing.

DANC 3410 Dance History **3-0-3**

A broad survey of dance history with emphasizes on the impact of dance on society from primitive times to the present.

DANC 3500 Teaching Dance Technique **1-2-2**

Methodology in teaching dance techniques and theories within the context of modern dance for young adults. Includes instruction in and application of dance lesson planning.

DANC 3600 Ballet III **1-2-2**

Prerequisite: DANC 2600 or approval of department head. A continuation of Ballet II with emphasis on developing the refined movements of ballet techniques and theories. May be repeated for credit.

DANC 3700 Modern Dance III **1-2-2**

Prerequisite: DANC 2700 or approval of department head. A continuation of Modern Dance II with emphasis on developing advanced skills in modern techniques and theories. May be repeated for credit.

DANC 3800 Jazz Dance II **1-2-2**

Prerequisite: DANC 2800 or approval of department head. A continuation of Jazz Dance I. May be repeated for credit.

DANC 4000 Pointe and Variation **1-2-2**

Prerequisite: DANC 3600 or approval of department head. The study of pointe technique, the teaching of specific classical ballet variations and partnering skills for both the male and female dancer. May be repeated for credit.

ECED: EARLY CHILDHOOD EDUCATION

ECED 3000 Learning Content Through the Use of Technology **2-0-2**

Prerequisite: Admission into Teacher Education Program. Co-requisite: READ 3200. Survey, review, and evaluation of technology and software appropriate for use with young children.

ECED 3100 Collaboration With Family, School, and Community Agencies to Support the Education of Young Children **2-0-2**

Prerequisite: Admission into Teacher Education. Examination of nature, extent, and significance of involving families in the education of young children. Interrelationships of home, school, and community agencies are examined in light