

**BMED 430. Desktop Publishing Design and Production.** 3 credits.

Experience in planning, designing and producing the publications of business and education with focus on transferability of functions among the genre of desktop publishing software.

**BMED 490. Independent Study in Business and Marketing**

**Education.** 1-3 credits. *Offered fall and spring.*

Provides opportunity to complete independent study or research on problems in business and marketing education. *Prerequisite: Permission of the program coordinator.*

## Chemistry

### Department of Chemistry and Biochemistry

**CHEM 100. Chemistry Today.** 3 credits.

Provides the background necessary to understand how chemistry affects our daily lives. An enriched overview of the fundamental principles of chemistry is followed by applications to topics of current interest. A high school science background is assumed. Not available for major or minor credit in chemistry.

**\*CHEM 120. Concepts of Chemistry.** 3 credits. *Offered fall and spring.*

A one-semester introduction to the fundamental principles, laws and applications of chemistry. Examples relating to the health sciences are emphasized. Not available for major or minor credit in chemistry.

**CHEM 120L. Concepts of Chemistry Laboratory.** 1 credit. *Offered fall and spring.*

A one-semester introduction to laboratory work which illustrates the fundamental principles, laws and applications of chemistry discussed in CHEM 120. Experiments relating to the health sciences are emphasized. *Prerequisite or corequisite: CHEM 120.*

**\*CHEM 131. General Chemistry I.** 3 credits. *Offered fall and spring.*

The first of a two-course general chemistry sequence for science majors. It is designed to introduce students to basic chemical concepts including atomic structure, periodic properties of the elements, nomenclature, basic stoichiometry, theories related to reactivity and bonding, and the behavior of materials. The laboratory and lecture portions of CHEM 131 must be taken concurrently. Chemistry majors take 135L rather than 131L.

**CHEM 132. General Chemistry II.** 3 credits. *Offered fall and spring.*

A course designed to examine the mechanisms by which chemists obtain information about reacting systems. Major concepts covered include: chemical reactivity, chemical equilibrium, electrochemistry, thermodynamics and kinetics. *Prerequisites: Grades of "C-" or higher in CHEM 131 and either CHEM 131L or CHEM 135L. Corequisite: CHEM 132L or 136L (chemistry majors take 136L).*

**CHEM 131L\*-132L. General Chemistry Laboratories.** 1 credit each semester. *Offered fall and spring.*

These laboratory courses are designed to complement and supplement the CHEM 131-132 lecture courses. The laboratory and lecture portions must be taken concurrently. Chemistry majors are to take CHEM 135L and 136L. *Prerequisites for CHEM 132L: Grades of "C-" or higher in CHEM 131 and either CHEM 131L or CHEM 135L.*

**CHEM 135L. Special General Chemistry Laboratory.** 1 credit. *Offered fall.*

An enriched laboratory course designed primarily for chemistry majors. *Corequisite: CHEM 131.*

**CHEM 136L. Special General Chemistry Laboratory.** 2 credits. *Offered spring.*

An enriched laboratory course that includes special topics and experiments not presented in the regular CHEM 132 laboratory. *Prerequisites: Grades of "C-" or higher in CHEM 131 and either CHEM 131L or 135L. Corequisite or prerequisite: CHEM 132.*

**CHEM 200. Computer Applications in Chemistry.** 1 credit. *Offered fall.*

Students are given chemically relevant problems that require that they learn to use software that all literate chemists should be familiar with. In addition, students are introduced to a programming language, first by writing macros for spreadsheet, presentation or word processing programs and finally, by using a high level programming language. *Corequisite or prerequisite: CHEM 341.*

**CHEM 221. Concepts of Organic Chemistry.** 3 credits. *Offered fall.*

An introduction to the study of organic compounds with emphasis on the chemistry of functional groups, including methods of preparation and interconversions. The laboratory and lecture portions must be taken concurrently. *Prerequisites: CHEM 132 and 132L.*

**CHEM 221L. Concepts of Organic Chemistry Laboratory.** 1 credit.

*Offered fall.*

Laboratory work will include training in the techniques of organic chemistry, preparation of compounds and some organic qualitative analysis. *Prerequisite or corequisite: CHEM 221.*

**CHEM 222. Concepts of Biochemistry.** 3 credits. *Offered spring.*

A survey of the principal constituents of living cells; proteins, carbohydrates, lipids and nucleic acids with emphasis on their synthesis and transformations in vivo. Intermediary metabolism and protein replication will be stressed. The laboratory and lecture portions must be taken concurrently; not available for major credit. Credit may not be earned in both CHEM 222 and BIO 220. *Prerequisites or corequisites: CHEM 221 and CHEM 221L (or CHEM 342 and CHEM 346L).*

**CHEM 222L. Concepts of Biochemistry Laboratory.** 1 credit. *Offered spring.*

The laboratory work will comprise experiments demonstrating some of the pertinent reactions including those of analytical value. *Prerequisite or corequisite: CHEM 222.*

**CHEM/PHYS/MATS 275. An Introduction to Materials Science.**

3 credits. *Offered fall.*

An introduction to materials science with emphasis on general properties of materials. Topics will include crystal structure, extended and point defects, and mechanical, electrical, thermal and magnetic properties of metals, ceramics, electronic materials, composites and organic materials. *Prerequisites: CHEM 131 and PHYS 150 or PHYS 250 or ISAT 212 or permission of the instructor.*

**CHEM 280. An Alternative Lower-Division Chemistry Experience.**

1-3 credits. *Offered fall and spring.*

This course will provide a mechanism for offering a nontraditional, lower-division, lecture and/or laboratory course. It will be offered only with the approval of the full-time teaching faculty. No course will be offered more than three times under the 280 designation. Students may repeat CHEM 280 for credit when course content changes.

**CHEM 300. Numerical Methods in Chemistry.** 1 credit. *Offered fall.*

Students learn to use computational software and a high level scientific language to facilitate the solution of numerical chemical problems.

**CHEM 325. Chemical Hazards and Laboratory Safety.** 1 credit. *Offered fall.*

A brief introduction to physical and chemical hazards which may be encountered in a laboratory setting. Methods of personal protection will be emphasized.

**CHEM 331. Physical Chemistry I.** 3 credits. *Offered spring.*

A study of thermodynamics, solutions, kinetics and macromolecules with applications of chemical and biological problems. *Prerequisites: CHEM 132 and either MATH 206 or MATH 236.*

**CHEM 336L. Applied Physical Chemistry Laboratory.** 1 credit. *Offered spring.*

A laboratory course which emphasizes the applied experimental aspects of physical chemistry. *Prerequisite or corequisite: CHEM 331.*

**CHEM 341-342. Organic Chemistry Lecture.** 3 credits each semester.

*Offered fall and spring.*

The major objective for this course is to teach the modern method of scientific problem solving using organic compounds as models. Emphasis will be on the chemical language (nomenclature and terminology), molecular electronic concepts, theories of organic reactions, stereochemistry and structure elucidation of organic compounds. *Prerequisite for CHEM 341: A grade of "C-" or higher in CHEM 132. Prerequisite for CHEM 342: A grade of "C-" or higher in CHEM 341. Corequisite for CHEM 342: CHEM 346L or CHEM 388L.*

**CHEM 346L. Organic Chemistry Laboratory.** 2 credits. *Offered spring.*

This course will present laboratory techniques and experiments associated with organic chemistry, including an introduction to synthesis, spectroscopic methods, chromatographic techniques and some qualitative organic analysis. *Prerequisite: A grade of "C-" or higher in CHEM 341. Corequisite: CHEM 342.*

**CHEM 351. Analytical Chemistry.** 4 credits. *Offered fall.*

The total analysis concept is introduced and developed. This framework encompasses the areas of experiment design, sample collection and treatment, and statistical evaluation of results, as well as standard analysis techniques. *Prerequisite: CHEM 132.*

**CHEM 352. Instrumental Analysis.** 3 credits. *Offered spring.*

This course emphasizes the application of instrumental techniques to the quantitative determination of chemical composition. Both instrument theory and practical applications are presented. *Prerequisites:* CHEM 351 and either MATH 205 or MATH 235.

**CHEM 352L. Instrumental Analysis Laboratory.** 2 credits. *Offered spring.*

This course will introduce students to the methodology and technology associated with the design and use of chemical instrumentation. Students perform experiments that illustrate the theoretical principles associated with instrument designs and the application of instruments to the solution of qualitative and quantitative analysis problems. *Corequisite:* CHEM 352.

**CHEM 354. Environmental Chemistry Field Camp.** 3 credits. *Offered summer.*

Fundamentals of environmental chemistry with laboratory and field trip components. The basic chemical principals of environmental problems are studied. Field trips and laboratory work on real samples are integrated with lecture material. *Prerequisite:* CHEM 341 or permission of instructor.

**CHEM/GEOL 355. Geochemistry of Natural Waters.** 3 credits. *Offered fall.*

Study of chemical theory and reactions important in natural water systems. The role of atmospheric, geologic and biological inputs in determining the geochemistry of streams, rivers and oceans. *Prerequisites:* CHEM 131 and CHEM 132 or equivalent.

**CHEM/BIO 361. Biochemistry I.** 3 credits. *Offered fall.*

An introduction to the molecules and chemical reactions of living systems. Structure and function of important classes of biomolecules are explored and the relationship of structure to function is stressed. Basic metabolic sequences are discussed. *Prerequisites:* CHEM 342 and permission of instructor.

**CHEM 362. Biochemistry II.** 3 credits. *Offered spring.*

A continuation of CHEM 361 including metabolic regulation, protein biosynthesis, analytical methods and isolation of biomolecules. *Prerequisite:* CHEM 361 or permission of the instructor.

**CHEM 366L. Biochemistry Laboratory.** 2 credits. *Offered spring.*

An introduction to laboratory techniques and experimental approaches associated with modern biochemistry. Isolation and characterization of enzymes and other biomolecules are emphasized. *Prerequisite:* CHEM 361.

**CHEM 370. Inorganic Chemistry I.** 3 credits. *Offered spring.*

A survey of the chemistry of the elements and modern theories of bonding. *Prerequisite:* A grade of "C-" or higher in CHEM 132 or CHEM 341.

**CHEM 387L-388L. Integrated Inorganic/Organic Laboratory.** 2 credits each semester. *Offered fall and spring.*

An enriched, integrated introduction to the laboratory procedures associated with inorganic and organic chemistry. Topics include apparatus design and construction, synthesis, separation methods, spectroscopic analysis, and application of computers in the laboratory. *Prerequisite or corequisite for CHEM 387L:* CHEM 341. *Prerequisites or corequisites for CHEM 388L:* CHEM 370 and CHEM 342 and a grade of "C-" or higher in CHEM 387L.

**CHEM 390A,B. Problems in Chemistry.** 1-3 credits, repeatable for a total of 4 credits. *Offered fall and spring.*

A project is undertaken dealing with some aspect of chemistry under the guidance of a faculty adviser.

**CHEM 395. Perspectives in Chemistry.** 1 credit. *Offered fall.*

A description of the technical and nontechnical capabilities expected of a university graduate who enters industry, government or academia is presented. The student is introduced to the various laws governing the chemical industry as well as to the fields of toxicology and environmental health. Experts in various disciplines discuss current topics of concern to the chemistry and biology student.

**CHEM 432. Physical Chemistry II.** 3 credits. *Offered fall.*

A study of atomic and molecular energy levels and structure as interpreted by quantum theory. *Prerequisites:* CHEM 132; MATH 206 or MATH 236; and PHYS 150 or PHYS 250.

**CHEM 438L. Physical Chemistry Laboratory.** 2 credits. *Offered fall.*

A laboratory course which emphasizes the application of various physical measurement techniques as a means of obtaining data to test fundamental chemical theory. *Corequisite:* CHEM 432.

**CHEM 440. Intermediate Organic Chemistry.** 3 credits. *Offered spring.*

An advanced study of the theory of organic chemistry as applied to chemical reactions and synthetic methods. Such topics as reaction mechanisms, spectroscopy and stereochemistry will be included. *Prerequisite:* CHEM 342.

**CHEM 445. Polymer Chemistry.** 4 credits. *Offered fall.*

A study of the synthesis and characterization of macromolecules. Polymer chemistry is discussed in a manner that focuses most attention on the properties of macromolecules that can be understood at the molecular level. *Prerequisite:* CHEM 342.

**CHEM 450. Nuclear and Radiation Chemistry.** 3 credits. *Offered spring.*

A study of the fundamentals of radioactivity in chemistry. Topics include the effects of radiation on matter, measurement of radiation, activation analysis, tracer studies and the nuclear fuel cycle. Applications of radioactive materials and radiation in industry and medicine will be described. *Prerequisites:* CHEM 132 and PHYS 250 or permission of the instructor.

**CHEM 450L. Laboratory for Nuclear and Radiation Chemistry.** 1 credit.

*Offered spring.*

A laboratory course designed to demonstrate the topics covered in CHEM 450. *Corequisite:* CHEM 450. *Prerequisites:* CHEM 132 and PHYS 250 or permission of the instructor.

**CHEM/PHYS 455. Lasers and Their Applications to Physical**

**Sciences.** 3 credits. *Offered spring.*

An introduction to both the theoretical and practical aspects of lasers and their applications in the physical sciences. *Prerequisite:* PHYS 270, CHEM 331 or permission of the instructor.

**CHEM 470. Inorganic Chemistry II.** 3 credits. *Offered fall.*

A study of selected topics in the field of advanced inorganic chemistry. *Prerequisite:* A grade of "C-" or higher in CHEM 370. *Prerequisite or corequisite:* CHEM 331.

**CHEM 480. Selected Topics in Chemistry.** 1-3 credits each semester.

*Offered fall and spring.*

This course is designed to allow an in-depth study of specific topics in chemistry selected according to student and faculty interests.

**CHEM 481. Literature and Seminar I.** 1 credit. *Offered fall.*

Provides instruction in methods of abstracting specific information from the body of chemical literature. Attendance at regularly scheduled department seminars is required.

**CHEM 482. Literature and Seminar II.** 1 credit. *Offered spring.*

Provides practice in preparing and presenting a literature-based seminar and paper on a chemical topic. Attendance at regularly scheduled department seminars is required. *Prerequisite:* CHEM 481 or permission of the instructor.

**CHEM 494. Internship in Chemistry.** 1-2 credits. May be repeated for a maximum of 6 credits. *Offered fall and spring.*

Students participate in research or applied chemistry outside of the university. A proposal must be approved prior to registration, and a final paper will be completed.

**CHEM 497A, B, C. Undergraduate Chemical Research.** 2-4 credits, repeatable for a total of 6 credits. *Offered fall and spring.*

Research in a selected area of chemistry, as arranged with and approved by a faculty research adviser the semester prior to registration.

**CHEM 499. Honors.** 6 credits. *Offered fall and spring.*

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## Chinese

**Department of Foreign Languages, Literatures and Cultures**

**CHIN 101-102. Elementary Chinese (4, 1).** 4 credits each semester.

*Offered fall and spring.*

The fundamentals of Mandarin Chinese through listening, speaking, reading and writing. Practice in pronunciation and development of comprehension. One hour's work a week in the language laboratory.

**CHIN 231-232. Intermediate Chinese.** 3 credits each semester. *Offered fall and spring.*

A thorough review of grammar, vocabulary building, conversation, composition and reading. *Prerequisite:* One year of college Chinese or equivalent.

**CHIN 300. Chinese Grammar and Communication.** 3 credits.

Intensive training in grammatical structures and their applications to oral and written conversation. Instruction is in Chinese. *Prerequisite:* CHIN 232 or equivalent.

**CHIN 320. Chinese Oral and Written Communication.** 3 credits.

Intensive training in the use of modern, everyday Chinese with emphasis on conversation and composition. Readings in Chinese will provide a context for discussion and writing. *Prerequisite: CHIN 300.*

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## Classics

**Department of Foreign Languages, Literatures and Cultures****CLAS 100. Latin and Greek Roots of English Words.** 2 credits. *Offered fall and spring.*

Intensive study of Latin and Greek word-roots, prefixes and suffixes in the forms they take in English words. An English vocabulary-development course for students with no knowledge of Latin or Greek. Does not count toward licensure in Latin.

**CLAS 265. The Individual and Society in Ancient Greece and Rome.** 3 credits. *Offered fall and spring.*

Discussion of literary and historical sources that reflect the attitudes and values of individuals in various social classes. All readings are in English.

**CLAS 266. Greek and Roman Classics in Translation.** 3 credits.

*Offered fall and spring.*

Discussion of the writings that illustrate the cultural values and intellectual attitudes which constitute the most important legacy of Classical civilization. All readings are in English.

**CLAS 337. Human Values: The Classical Tradition.** 3 credits. *Offered fall and spring.*

Discussion of human values and the human condition reflected in writings from the eighth century B.C. to the present day. Does not count toward licensure in Latin. All readings are in English.

**CLAS 360. Topics in Greek and Roman Culture.** 3 credits. *Offered once a year.*  
A study of selected topics in the culture of Ancient Greece and Rome. May be repeated for credit with change of topics.

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## College of Business

**College of Business****COB 191. Business Statistics.** 3 credits. *Offered fall and spring.*

The application of statistical methods to business. Introduces data presentation, descriptive statistics, probability, sampling, estimation and hypothesis testing. Emphasis is on using spreadsheet tools and functions of statistical analysis. *Prerequisite: MATH 155, MATH 156 or sufficient score on the Mathematics Placement Exam.*

**COB 202. Interpersonal Skills.** 3 credits. *Offered fall and spring.*

An applied course consisting of experiential exercises followed by class discussion. Cases are used as learning activities where the instructor acts as a facilitator to learning. Essential theory emanates from class discussions with a student-based rather than instructor-based format. Theory and application are intertwined by means of student self-assessment exercises and group discussion. *Prerequisite: Open only to sophomore business majors.*

**COB 204. Computer Information Systems.** 3 credits. *Offered fall and spring.*

An introduction to computer-based information systems. Emphasis is placed on computer hardware, software, analysis, design and implementation of information systems, computer ethics, and the role of computers in society, and the functional areas of business. Students will create databases and Web pages using microcomputer tools.

**COB 218. Legal Environment of Business.** 3 credits. *Offered fall and spring.*

A study of the law as a means of social, political and economic change. The American legal system from the standpoint of its sources and philosophy with special emphasis on business relations and the role of government in affecting them.

**COB 241. Financial Accounting.** 3 credits. *Offered fall and spring.*

The role of financial data in contemporary society; the problems of measuring and reporting income, assets, liabilities and equities; interpretation of financial statements. *Prerequisite: Sophomore standing.*

**COB 242. Managerial Accounting.** 3 credits. *Offered fall and spring.*

The attention-directing and problem-solving functions of accounting in relation to current planning and control, evaluation of performance, special decisions, and long-range planning. *Prerequisite: COB 241.*

**COB 291. Introduction to Management Science.** 3 credits. *Offered fall and spring.*

The application of quantitative modeling and analysis to decision making. Introduces linear programming, decision theory, queuing, simulation and forecasting methods. Emphasis is on implementing spreadsheet models for business applications. *Prerequisites: COB 191 and MATH 205 or equivalent.*

**COB 300A. Integrated Functional Systems: Management.** 3 credits.

*Offered fall and spring.*

COB 300A is the management component of an integrated learning experience consisting of four courses, taken concurrently, which introduces the fundamental conceptual tools of management, finance, operation and marketing in such a way as to establish their mutual relevance and interdependence. Students work in small project teams on tasks designed to require the application in concert of conceptual tools from each of the function areas. *Prerequisites: Completion of all required 100- and 200-level B.B.A. core courses, junior standing (56 hours), a cumulative 2.8 grade point average in all courses taken at JMU, and formal admission to the College of Business.*

**COB 300B. Integrated Functional Systems: Finance.** 3 credits. *Offered fall and spring.*

*Offered fall and spring.*

COB 300B is the finance component of an integrated learning experience consisting of four courses, taken concurrently, which introduces the fundamental conceptual tools of management, finance, operation and marketing in such a way as to establish their mutual relevance and interdependence. Students work in small project teams on tasks designed to require the application in concert of conceptual tools from each of the function areas. *Prerequisites: Completion of all required 100- and 200-level B.B.A. core courses, junior standing (56 hours), a cumulative 2.8 grade point average in all courses taken at JMU and formal admission to the College of Business.*

**COB 300C. Integrated Functional Systems: Operations.** 3 credits.

*Offered fall and spring.*

COB 300C is the operations component of an integrated learning experience consisting of four courses, taken concurrently, which introduces the fundamental conceptual tools of management, finance, operation and marketing in such a way as to establish their mutual relevance and interdependence. Students work in small project teams on tasks designed to require the application in concert of conceptual tools from each of the function areas. *Prerequisites: Completion of all required 100- and 200-level B.B.A. core courses, junior standing (56 hours), a cumulative 2.8 grade point average in all courses taken at JMU, and formal admission to the College of Business.*

**COB 300D. Integrated Functional Systems: Marketing.** 3 credits.

*Offered fall and spring.*

COB 300D is the marketing component of an integrated learning experience consisting of four courses, taken concurrently, which introduces the fundamental conceptual tools of management, finance, operation and marketing in such a way as to establish their mutual relevance and interdependence. Students work in small project teams on tasks designed to require the application in concert of conceptual tools from each of the function areas. *Prerequisites: Completion of all required 100- and 200-level B.B.A. core courses, junior standing (56 hours), a cumulative 2.8 grade point average in all courses taken at JMU, and formal admission to the College of Business.*

**COB 301. European Integration, Culture and History.** 3 credits. *Offered fall and spring.*

*Offered fall and spring.*

This course is designed to complement the COB 300 A-D or European marketing minor when taught as part of the semester in Antwerp, Belgium program. COB 301 will only be offered as part of the semester in Antwerp program. Students will study European integration in the classroom and visit governmental institutions, historical places and cultural events associated with course content. *Prerequisites: Requires acceptance to the semester in Antwerp program. Must be taken as a corequisite with COB 300 or courses for the European marketing minor. Cannot be used as an elective to fulfill any CoB major or any other minor.*

**COB 487. Strategic Management.** 3 credits. *Offered fall and spring.*

Strategic management is designed to be the capstone course for seniors completing their undergraduate studies in the various functional areas of business administration. The course is comprehensive and structured to build on the foundational knowledge students have gained through completing the interdisciplinary COB 300, Integrated Functional Systems, learning experience and from their respective concentrations. *Prerequisites COB 300 and completion of one full academic semester after completing COB 300.*

**COB 490. Special Studies in Business Administration.**

1-3 credits. Offered fall and spring.

Designed to give capable students an opportunity to complete a faculty supervised independent study apart from a specific major. *Prerequisite: Permission from the Associate Dean for Student Services.*

**COB 491. Peer Advisor Training.** 0 credits. Offered fall and spring.

This block course will provide peer advisor trainees with the information necessary to give guidance to their peers in understanding various university and college academic policies and procedures and the university resources available to address academic questions and issues. Cannot be applied to any College of Business major or minor. *Prerequisites: Junior standing (78 credit hours) and approval of the Associate Dean for Student Services one month prior to registration.*

**COB 492. Peer Advising.** 2 credit hours per semester, limit of 4 credit hours in total. Offered fall and spring.

Practicum in advising focuses on College of Business students providing guidance to their peers in understanding various university and college academic procedures and policies, as well as offering knowledgeable referrals to appropriate university resources. May be taken twice for up to four credit hours. Cannot be applied to any CoB major or minor. *Prerequisites: Senior standing and successful completion of COB 491.*

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## Communication Sciences and Disorders

### Department of Communication Sciences and Disorders

**CSD 200. Introduction to Communication Disorders.** 3 credits.

This course is an introduction to human communication, the most advanced of neurological functions which separates humans from all other species. It surveys both normal and communicatively disordered populations served by audiologists, speech-language pathologists, educators and neuropsychologists.

**CSD 207. Phonetics.** 3 credits.

Instruction in various transcription techniques for phonetic and phonemic analysis of speech production.

**CSD 208. Anatomy and Physiology of the Ear and Voice Mechanism.** 3 credits.

A detailed study of the anatomy and physiology of the speech mechanism. *Prerequisite: CSD majors only or by permission of instructor.*

**CSD 209. Acoustics of Speech and Hearing.** 3 credits.

Introduction to acoustics of speech and hearing. Introduction to physical acoustics, sound generation and transmission, resonance, speech acoustics, and speech perception.

**CSD 300. Language Development.** 3 credits.

The study of language acquisition, development, structure and function in normal children. The development of language in all cultures and the universal nature of the developmental process is the foundation for continued study in speech-language hearing. *Prerequisite: Open to CSD majors only.*

**CSD 301. Audiology.** 3 credits.

An introduction to the symptoms, causes and treatment of hearing disorders. Hearing test instrumentation and interpretation in clinical situations are emphasized.

**CSD 310. Biostatistical Methods for Communication Sciences and Disorders.** 3 credits.

An introduction to research conducted in and applied to the disciplines of speech-language pathology and audiology. Traditional statistical methods in behavioral and social sciences will be included as well as qualitative and quantitative research approaches relevant to individuals and populations with communication disorders.

**CSD 314. Phonological and Language Disorders.** 3 credits.

An introduction to phonological and language disorders in children and adults. Etiological and maintaining factors are discussed, and an overview of assessment and (re)habilitation procedures is presented. *Prerequisite: CSD 200, CSD 207, CSD 300 or permission of instructor.*

**CSD 318. Aural Rehabilitation.** 3 credits.

Concentrated attention is given to communication problems of the hearing handicapped. Aural rehabilitation is emphasized including lip reading and auditory training. *Prerequisite: CSD 301 or permission of instructor.*

**CSD 415. Neuroanatomy and Neurogenic Communication Disorders.** 3 credits.

Introduces neurogenic communication disorders from a neuroanatomical approach.

**CSD 416. Organic Speech Disorders.** 3 credits.

Clinical procedures in the areas of fluency, oral-facial and voice disorders are studied. Evaluative and remedial aspects are emphasized.

**CSD 420. Introduction to Sign Language.** 3 credits.

Provides an introduction to American Sign Language, the deaf community and English-based signed systems.

**CSD 421. Sign Language II.** 3 credits.

Focuses on developing conversational skills of students whose core vocabulary and knowledge of the grammar and pragmatics of sign language are basic; distinguishes ASL from English sign systems. *Prerequisite: CSD 420 or permission of the instructor.*

**CSD 444. Child Language Development and Disorders.** 3 credits.

The study of normal language development in children, including an overview of the linguistic bases of language. Topics include the examination of the various manifestations of language disorders in children and the different strategies for intervention. This course does not meet the degree requirements for CSD majors.

**CSD 470. Methods and Observation.** 3 credits.

Directed observation and participation in practical experiences. Introduction to the clinical process in speech-language pathology. Practical clinical methodology will be emphasized. Majors only. Must have senior status to enroll.

**CSD 471. Methods and Observation in Audiology.** 3 credits.

An introduction to the clinical process in audiology via directed observation and participation in laboratory and patient interactions. Practical clinical methodology is emphasized. Majors only with interest in graduate study in audiology. Repeatable for credit up to six credits. Must have senior status to enroll. *Prerequisite: Permission of the instructor.*

**CSD 490. Special Studies in Communication Sciences and Disorders.** 1-3 credits.

Provides students opportunity for independent study and/or small class instruction in elective topics.

**CSD 499. Honors.** 6 credits.

See catalog descriptions titled "Graduation with Distinction" and "Graduation with Honors."

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## Communication Studies

### School of Communication Studies

**SCOM 231. Introduction to Alternative Dispute Resolution.** 3 credits.

Study of conflict resolution processes including mediation, arbitration and negotiation. Consideration of litigation and hybrid dispute processes such as summary jury trial, rent-a-judge and panel evaluation.

**SCOM 240. The Process of Human Communication.** 3 credits.

Study of communication studies as a behavioral process employing verbal and nonverbal modes of interaction. Emphasis on learning theory, motivation, language, meaning and social interaction as applied to the theory of communication studies. Consideration of role of communication in all human endeavors.

**SCOM 242. Presentational Speaking.** 3 credits.

Study of methods for preparing and presenting public speeches. Consideration of impromptu and extemporaneous speaking, sales speeches, business presentations and other special occasion speeches. Emphasis on performance and evaluation. *Prerequisite: Any 100-level GCOM course or permission of the instructor.*

**SCOM 243. Oral Interpretation.** 3 credits.

Study and application of theories concerning the oral presentation of various forms of literature including prose, poetry, drama and nonfiction materials. Emphasis on performance. *Prerequisite: Any 100-level GCOM course or permission of the instructor.*

**SCOM 245. Signs, Symbols and Social Interaction.** 3 credits.

The study of verbal and nonverbal communication as used in human interaction. Consideration given to the function of symbolic systems in self-concept development, the structuring of reality and social discourse. Attention is directed toward the use of signs and symbols by different ethnic groups, genders, age groups and geographic groups.

**SCOM 247. Small Group Communication.** 3 credits.

Study of communication processes involved in solving problems when working with others in a small group context. Emphasis on concepts of roles, norms, leadership and decision making. Consideration of small group factors which influence problem-solving effectiveness. *Prerequisite: Any 100-level GCOM course or permission of the instructor.*

**SCOM 248. Intercultural Communication.** 3 credits.

The study of human communication in a variety of cultural settings and contexts. Emphasis on developing understanding and analytical skills regarding communication between people from different racial, ethnic and cultural backgrounds in both domestic and international settings. Consideration of relevance and application to social, business and political environments.

**SCOM 260. Introduction to Public Relations.** 3 credits.

Study of basic principles and practices of public relations. Consideration given to public relations problems and pragmatic solutions utilizing oral, written and electronic communication media and skills.

**SCOM 261. Public Relations Techniques I: Written.** 3 credits.

Study of writing fundamentals for public relations. Emphasis on practice of effective writing for a variety of media (press releases, public service announcements, brochures, newsletters). Must be able to use word processing software. *Prerequisite: SCOM 260 or permission of the instructor.*

**SCOM 270. Introduction to Health Communication.** 3 credits.

An introduction to the study of the theory and practice of communication in health and medical-related fields. Emphasis on communication interaction between professional health providers and patients/clients. Consideration of strategies that promote effective communication between health/medical professionals and patients/clients. *Prerequisite: Any 100-level GCOM course.*

**SCOM 280. Introduction to Communication Research.** 3 credits.

An introduction to the principles, methods and analysis techniques used in the field of communication. Emphasis on a broad-based understanding of the breadth of research in the field. Includes both qualitative and quantitative research methods, methods of literature review and research article critiques. Fulfills the College of Arts and Letters writing-intensive requirement for the major. *Prerequisite: SCOM 240.*

**SCOM/ANTH 305. Language and Culture.** 3 credits. *Offered once a year.*

An introduction to linguistic anthropology. Explores the complex relationships between language and culture through topics such as language acquisition and socialization; language, thought, and worldview; language and identity; multilingualism; how and why languages change; literacy; and the politics of language use and language ideologies.

**SCOM 313. Topics in Communication Studies.** 1-3 credits, repeatable to 6 credits.

Study of current topics and issues in human communication. Emphasis on contemporary theories, research and principles. *Prerequisites: Nine hours of SCOM courses including SCOM 240 and one at 100 level or permission of instructor.*

**SCOM 318. Practicum in Communication Studies.** 1-6 credits.

Approved co-curricular activities and/or projects of a practical nature. No more than six hours of practicum credit can be applied to major. Proposals must be submitted to and approved by the course instructor for section and credit hour registration. To receive repeat credit, see school director. *Prerequisite: Permission of the school director.*

**SCOM 320. Introduction to Interpersonal Communication.** 3 credits.

Introduction to the fundamental theoretical perspectives in interpersonal communication. Emphasis on the effects of verbal and nonverbal messages on continuity and change in personal relationships. Consideration of the influence of cultural and social contexts on messages in relationships. Development of communication competence in diverse interpersonal contexts.

**SCOM 330. Special Topics in International Communication.** 3 credits.

Study of current topics and issues in interpersonal communication. Topics and issue may include, but are not limited to aging and lifespan, communication education, computer mediated relations, deception and secrecy, friendship and rivalry, relationship rejuvenation, and social support. May be repeated up to six credits.

**SCOM 331. Communication and Conflict.** 3 credits.

An examination of communication in conflict situations. Emphasis on communication competencies required for successful management and resolution of conflict. Consideration of theories of conflict and application to different conflict levels including interpersonal communication, small group communication and organizational communication. *Prerequisite: SCOM 231 recommended.*

**SCOM 332. Mediation.** 3 credits.

Study of analysis and resolution of human conflict. Emphasis on role of mediation in dispute resolution focusing on relationships, language, listening and problem-solving techniques. Consideration of the interpersonal and group approaches to study of conflict management. *Prerequisite: SCOM 231 recommended.*

**SCOM 340. Principles and Processes of Interviewing.** 3 credits.

Study of communication principles and processes in interviewing. Emphasis on interpersonal processes involved in interview structures, goals and question types. Development of communication skills in information, persuasive, counseling, health care, employment and performance appraisal interviews.

**SCOM 341. Persuasion.** 3 credits.

The study of oral communication as a determinant of attitudinal and behavioral change. Emphasis on the various kinds of artistic and non-artistic proofs as they apply to human motivation. Consideration of the application of behavioral research findings to persuasion. *Prerequisites: SCOM 240 and SCOM 280 or permission of the instructor.*

**SCOM 342. Argument and Advocacy.** 3 credits.

The study of the techniques and principles of argument and advocacy. Emphasis on developing, presenting and defending a position on controversial questions. Consideration given to contemporary theories of public argument.

**SCOM 345. Nonverbal Communication.** 3 credits.

Study of nonverbal means through which people relate to one another. Consideration of the communicative effects of environment, facial expression, voice, posture, gestures, touch, distance and physical appearance. *Prerequisites: SCOM 245 recommended and any 200-level SCOM course or permission of the instructor.*

**SCOM 346. Free Speech in America.** 3 credits.

The study of the evolution of freedom of speech in America from Colonial times to the present day. Emphasis on the major periods of development and on the role of courts in defining freedom of speech. Special consideration of contemporary freedom of speech controversies.

**SCOM 347. Communication, Diversity and Popular Culture.** 3 credits.

Study of the rhetorical dimension of communication practices and texts found in popular culture. Emphasis on issues of diversity as they are manifested in the communication practices found in popular culture. Emphasis on strategic communication choices in a diverse, multicultural world. Emphasis on critical thinking, self-reflexivity and communication analysis. *Prerequisite: GCOM 121, GCOM 122 or GCOM 123.*

**SCOM/WMST 348. Communication and Gender.** 3 credits.

Study of theories and research regarding the influence of gender in various human communication contexts, both public and private. Emphasis on the critical analysis of existing theory and empirical research and the potential competent uses of communication for social change. *Prerequisite: Any 100-level GCOM course or permission of the instructor.*

**SCOM 349. Ethnographic Approaches to Communication Studies.** 3 credits.

This course offers an examination of ethnographic approaches to interpersonal, organizational, health and public communication studies. Students will analyze the role of ethnographic methods and inductive research processes toward building theories of communication and assessing communication practices. *Prerequisite: Any 100-level GCOM course or permission of instructor.*

**SCOM 350. Organizational Communication.** 3 credits.

Study of theories and principles of communication within organizations. Emphasis on analysis of formal and informal communication systems, networks, and interactions with organizational hierarchies. Consideration of both profit and not-for-profit contexts.

**SCOM/WRIT 351. Visual Rhetoric.** 3 credits.

A study of the rhetorical foundations of visual and verbal arguments in academic disciplines and popular culture. Students will analyze and produce visual and verbal arguments in a variety of rhetorical contexts. *Prerequisites: GWRT 103 and any 100-level communication studies course or permission of the instructor.*

**SCOM 352. Communication and Social Movements.** 3 credits.

A study of the use of communication in social movements. Emphasis on the types of communication used in social movements and on ways to produce and respond to such messages. This course examines a variety of different social movements within the political process including nonprofit organizations. *Prerequisite: SCOM 240.*

**SCOM 353. American Political Culture and Communication.** 3 credits.

Study of functions performed by communication in politics. Emphasis on a variety of communication forms and techniques used by advocates both in campaigning and governing. Consideration of contemporary campaigns and the role of communication in their successes and failures. *Prerequisites: SCOM 240 and GPOSC 225 are recommended or permission of the instructor.*

**SCOM 354. Communication, Environment and Environmentalism.** 3 credits.

An exploration of how messages and information about nature and the environment are communicated, focusing on persuasive efforts by institutions, corporations, environmental managers, lobbyists, scientific experts, politicians and citizens to describe and shape human interactions with the environment and each other. This course seeks to increase our understanding of the ways that these environmental discourses persuade (and fail to persuade) different publics.

**SCOM 358. Business and Professional Communication Studies.** 3 credits.

Study of techniques of effective communication in business/professional context. Emphasis on communication skills and results. Consideration of communication problems unique to the business/professional environment.

**SCOM 361. Public Relations Techniques II: Visual.** 3 credits.

Study of visual communication techniques for public relations. Survey of design principles and elements used for developing visually effective messages with an emphasis on publication design and production, photography and computer-mediated presentations. Students should provide a camera and be familiar with desktop publishing and presentational software. *Prerequisite: SCOM 261 or permission of the instructor.*

**SCOM 367. Advanced Public Relations Writing.** 3 credits.

Offers advanced public relations students experience in the wide range of writing style and applications that are essential to successfully begin their professional careers. The course focuses on understanding and mastering action-oriented communication methods and best professional practices. Provides both a conceptual framework and in-depth training in advance techniques. *Prerequisite: SCOM 261.*

**SCOM 381. Communication Criticism.** 3 credits.

Study of methods of evaluating acts of persuasive communication. Emphasis on developing and applying appropriate standards to determine effectiveness of persuasion. Consideration of criticism of advertising, mass media, public speaking and other forms of persuasive communication. *Prerequisites: SCOM 280 and any 100-level GCOM course or permission of the instructor.*

**SCOM 383. Communication Research Methodologies.** 3 credits.

The study of research methods in various areas of communication. Emphasis on ability to research literature and criticize research design. *Prerequisites: SCOM 280 and nine hours of SCOM courses or permission of the instructor.*

**SCOM 385. Qualitative Communication Research Methods.** 3 credits.

Study of interpretive approaches to communication research using a variety of qualitative research methods, including field observation, qualitative interviewing, focus groups, narrative analysis and discourse analysis. Students will plan and conduct an exploratory qualitative study, prepare a written research report including a literature review and make a research presentation. *Prerequisite: SCOM 280 or permission of instructor.*

**SCOM 386. Communication Survey Research.** 3 credits.

Consideration of survey problems and methods unique to communication. Emphasis on using survey research methodology in communication audits, public relations problems and public opinion polling. *Prerequisite: SCOM 280 or permission of the instructor.*

**SCOM 390. Directed Projects.** 2-3 credits, repeatable to 6 credits.

Supervised projects related to any aspect of human communication. Emphasis on original individual or group programs beyond the school's usual curricular or co-curricular offerings. Formal report(s) required for awarding of credit. *Prerequisite: Permission of the school director.*

**SCOM 391. Communication Career Strategies.** 1 credit.

The study of strategies for implementing a job/internship campaign. Emphasis on conducting a self assessment, locating job and internship openings, writing resumes, cover letters and follow-up messages, conducting informational interviews, networking, interviewing techniques, and marketing a communication studies degree. *Prerequisite: 12 credit hours in SCOM.*

**SCOM 394. Core Assessment in Communication Studies.** 0 credits.

Students participate in testing, interviews and other assessment activities as approved by the School of Communication Studies. Grades will be assigned on a credit/no credit basis. *Prerequisites: SCOM 240, SCOM 242, SCOM 245, SCOM 280 and SCOM 341.*

**SCOM 395. Study Abroad Seminar.** 3-6 credits.

Intensive examination of specialized international communication topics arranged in cooperation with a faculty member. Prior arrangements must be made with the program director. *Prerequisite: Permission of the program director and school director required.*

**SCOM/WRIT/WMST 420. Feminist Rhetorics.** 3 credits.

Surveys key women figures in classical and contemporary rhetorical traditions and challenges the strategies used to historicize this tradition from feminist perspectives. Explores diverse feminist rhetorical discourses informed by race, sexual orientation, ethnicity and social class. *Prerequisite: Junior or senior standing.*

**SCOM 425. Leadership Communication.** 3 credits.

This course promotes leadership development through study of leadership theory and practical application. The course focuses on building leadership competencies in interpersonal communication, team building, multicultural environments, mentoring, problem solving and influence strategies used in interpersonal and public forums to bring about community and organizational change.

**SCOM 431. Legal Communication.** 3 credits.

Study of the role of communication in the legal process. Emphasis on communication questions/problems which litigants, lawyers, judges and jurors face. Consideration of legal argument, negotiation, trial advocacy, decision making and communication technologies.

**SCOM 432. Senior Seminar in Conflict and Mediation Studies.** 3 credits.

An advanced seminar, capstone course for students concentrating or minoring in conflict and mediation studies. Special topics are developed to include research in conflict resolution, current trends in dispute resolution, evolving practices in conflict and mediation, as well as other relevant and timely issues.

**SCOM 440. Family Communication.** 3 credits.

Study of the processes and functions of family communication, including managing dating, marital, parent-child and intergenerational relations. Theoretical and applied examination of communication and cultural processes that define and construct family structures, systems and boundaries. Course also examines histories of family communication as constructed in popular culture. *Prerequisites: SCOM 280 or permission of the instructor.*

**SCOM/ANTH/HIST 441. Oral History and Social Justice.** 3 credits.

*Offered spring semester.*

This course will explore the theoretical and methodological questions that have been raised in the field of oral history related to evidence and objectivity, personal and collective memory, narrative structure, ethics and social justice. Throughout the course students will conduct multiple interviews in the Shenandoah Valley and prepare a final presentation based on this material. *Prerequisite: HIST 395 or permission of instructor.*

**SCOM 448. Seminar in Cultural Communication.** 3 credits.

Advanced study of theory and research in cultural communication and intercultural contact. Consideration of communication practices that construct and arrange social and ethnic identities within specific contexts. *Prerequisites: SCOM 248 and SCOM 349 or permission of the instructor.*

**SCOM 449. Communication Training.** 3 credits.

An examination of methods for planning, arranging and conducting communication training. Students become familiar with strategies and activities designed to help others improve their communication skills. *Prerequisites: Junior standing and 12 hours in SCOM or permission of the instructor.*

**SCOM 450. Advanced Studies in Organizational Communication.** 3 credits.

Integrated study of organizational communication theory and research. Analysis of communication systems within organizations and at their boundaries. Special attention to field studies. *Prerequisite: SCOM 350 or permission of the instructor.*

**SCOM 453. Political Campaign Communication.** 3 credits.

An advanced study of communication techniques, procedures and processes as they relate to political campaign communication. Emphasis upon the design, execution and production of various communication messages. Consideration of the impact and utilization of various technologies in political campaigns. *Prerequisite: SCOM 353 or permission of the instructor.*

**SCOM 460. Public Relations Management.** 3 credits.

Intensive study and research of advanced communication management skills, theory and principles using case and field studies. Special attention to systematic and ethical management of communication and action affecting an organization's internal and external publics. *Prerequisites: SCOM 341 and SCOM 361.*

**SCOM 461. Public Relations Campaigns.** 3 credits.

The capstone course for the public relations program of study. Students further their theoretical understanding and practical skills in the processes of research, planning, communication/action and evaluation by conducting campaigns for specific organizations. *Prerequisites: SCOM 261, SCOM 361, SCOM 386 and SCOM 460, or permission of the instructor.*

**SCOM 463. International Public Relations.** 3 credits.

Explores the special professional challenges and opportunities arising from the dynamic global public relations developments characterizing the beginning of the this century, taking into account social, economic, political, legal, and cultural factors as well as new media developments. *Prerequisite: SCOM 260; Corequisite: SCOM 460.*

**SCOM 467. Global Public Relations Seminar.** 3 credits.

Advanced experimental learning approach combined with relevant theory and research provides students with an opportunity to enhance critical global communication knowledge and skills urgently required to meet this century's cultural, social, political and economic challenges. Students team with peers at universities worldwide in developing comprehensive strategic management programs. *Prerequisite: Permission of instructor.*

**SCOM 470. Health Communication Campaigns.** 3 credits.

The study of advanced theory and practice of communication in health-related fields. Consideration of topics relating to communication issues which affect communication interaction between health professionals and clients/patients. Emphasis on the use of communication in health communication campaigns. *Prerequisite: SCOM 270 or permission of the instructor.*

**SCOM/SMAD/POSC 472. Media and Politics.** 3 credits.

A study of the media's role in political campaigns, concentrating on past/present election, the media's role in covering political parties and coverage of the governing process. Discussion of electronic and print will occur. Topics to be examined include campaign videos, CSPAN, political ads, editorial cartoons, TV debates, convention coverage and radio talk show commentary.

**SCOM 490. Special Studies in Communication Studies.** 1-3 credits.

An independent study for students to pursue individual research under the guidance of faculty. Limited to senior communication studies majors in good standing with permission of school director.

**SCOM 495. Internship in Communication Studies.** 3-6 credits, repeatable to 6 credits.

Credit for the application of communication theory and skills in a directed, on-the-job learning experience. Open only to communication studies majors who meet specific criteria (see the school Web site). Up to six credits may be applied as electives in the communication studies' major. *Prerequisite: Permission of the school director.*

**SCOM 499. Honors in Communication Studies.** 6 credits.

Year course. *Prerequisite: Permission of the school director.*

## Computer Information Systems and Management Science

### College of Business

**CIS/IA 210. Introduction to Global Competitive Intelligence.**

3 credits. *Offered fall.*

This course will focus on the tools and methods for the analysis and interpretation of business data related to external competitors and internal performance management in a global environment. Students will develop skills in data retrieval, manipulation, analysis and interpretation. Not open to students pursuing a major or minor in CIS. Not open to any major in the COB other than International Business.

**CIS 221. Principles of Programming.** 3 credits. *Offered fall and spring.*

Instruction and practical experience in writing computer programs using object oriented design and event driven logic. Projects will include the use of control structures (sequence, selection and iteration) as well as file and array processing logic. Students will be required to demonstrate competency in the design of object-oriented solutions and the implementation of event driven logic to solve real-world business problems. Not open to students who have taken CS 239.

**CIS 301. Operating Systems and Server Administration.** 1 credit.

*Offered fall and spring.*

This is a lab-based course that introduces the student to operating systems and server administration in a business environment. Students will learn the basic functions of an operating system through the hands-on use of Linux and Windows. Additionally, students will acquire hands-on server administration skills in order to better understand the operational and security demands of business applications. *Corequisite or prerequisite for CIS majors: COB 300. Prerequisite for declared CIS minors: COB 204 and junior or senior standing.*

**CIS 304. Information Technology.** 3 credits. *Offered fall and spring.*

This course is an intermediate-level information systems course. Course topics include the workings of hardware components including the processor, data storage media and peripheral devices. Also included are several operating systems, file management systems and ethical concepts. *Corequisite or prerequisite for CIS majors: COB 300. Prerequisite for declared CIS minors: COB 204 or equivalent and junior or senior standing.*

**CIS/CS 320. Telecommunications and Information Processing.**

3 credits. *Offered fall and spring.*

Instruction and cases in the design, development and management of telecommunications topics and office information processing. *Prerequisite: One of CIS 304, ISAT 252 or CS 139.*

**CIS 330. Database Design and Application.** 3 credits. *Offered fall and spring.*

A study of the tools and techniques of database analysis and design including the implementation of the design using common database management system models. Not open to students who have taken CS 474. *Prerequisites: CIS major: COB 300 prerequisite or corequisite and CIS 221 with a "C" or better. CIS minor: CIS 221 with a "C" or better and junior or senior standing.*

**CIS 331. Intermediate Computer Programming.** 3 credits. *Offered fall and spring.*

Study of concepts and techniques used in structured programming for business applications including program specification, design, development, testing, implementation and documentation. Topics include report processing, file processing and updating, programming for batch and interactive environments, data validation, array processing and software engineering principles. *Corequisite or prerequisite for CIS majors: COB 300 and CIS 221 or equivalent with a grade of "C" or better. Prerequisite for declared CIS minors: CIS 221 or equivalent with a grade of "C" or better and junior standing.*

**CIS 354. Advanced Visual Basic Programming.** 3 credits. *Offered as needed.*

Advanced course in Visual Basic programming. Emphasis will be placed on Object-Oriented programming, sequential and random data files and error trapping. Other topics covered will include data access objects, client server, printing in VB and Crystal Reports. *Prerequisite: CIS 221 with a grade of "C" or better.*

**OM 360. Operations Management.** 3 credits. *Offered as needed.*

An introduction to the operations function in business. Topics include facility design, job analysis and design, forecasting, production planning, quality management, inventory management, scheduling and project management. *Prerequisites: CIS/COB 291 and junior standing.*

**CIS 361. Computer Information Systems Internship.** 0 credits.

*Offered fall and spring.*

To enable students to gain valuable work experience in a CIS-related field. Requires 300 hours of approved computer information systems work experience. All work sites must be pre-approved. *Prerequisites: CIS major and COB 300.*

**CIS/MS 363. Business Process Management.** 3 credits. *Offered fall.*

This course covers the fundamental principles of successful process management for business applications and its role in identifying and communicating system requirements during a project life cycle. Students will learn tools to map process flows, analyze operational variables and evaluate the effects of random variation. Emphasis will be placed on modeling process dynamics with discrete-event simulation software and applying statistical-based methodologies to support the design, analysis and control of business processes to improve performance. *Prerequisites: COB 291 or equivalent and junior or senior standing.*

**CIS/MS 364. Decision Support Systems.** 3 credits. *Offered fall.*

This course provides students with an understanding of computer-based information systems, which enhance the decision making capabilities of managers. Students will learn to extend the capabilities of Microsoft Office using Visual Basic for Applications and build decision support systems. *Prerequisites: COB 291 or equivalent and junior or senior standing.*

**CIS 366. Web Development.** 3 credits. *Offered fall.*

This course is an introduction to the development of Web pages and Web sites. The three major topics covered are HyperText Markup Language (HTML), the principles of design for Web sites and the use of a programming language for Web development. *Corequisite or prerequisite for CIS majors: COB 300 and CIS 221 or equivalent with a grade of "C" or better. Prerequisite for declared CIS minors: CIS 221 or equivalent with a grade of "C" or better and junior or senior standing.*

**MS/MGT 370. Quality Management.** 3 credits. *Offered as needed.*

An introduction to the management of quality in organizations. Topics include statistical quality control, the design of quality management systems, implementation, measurement and management issues in quality programs. *Prerequisites: COB 300 and junior or senior standing.*

**CIS 383. Introduction to Unix and Perl.** 3 credits. *Offered as needed.*

Instruction and practical experience in designing and coding application software for business functions using Unix and Perl. *Prerequisites: CIS 221 or CS 139 and junior or senior standing or declared CIS minor.*

**MS 391. Quantitative Business Modeling.** 3 credits. *Offered fall.*

This course addresses a wide range of complex business problems through quantitative modeling and appropriate computer applications, especially spreadsheets. Approaches include optimization and sensitivity analysis, multi-objective decision making and risk analysis. *Prerequisites: COB 291 or equivalent and junior or senior standing.*

**MS 393. Business Analytics: Data Mining.** 3 credits. *Offered spring.*

This course focuses on quantitative techniques and computer applications that allow the extraction of useful, previously unrecognized information from large data sets. By effectively sifting through databases such as those generated by many businesses, data mining allows the analyst to recognize potentially important patterns and to target business opportunities. *Prerequisite: COB 291 or equivalent and junior or senior standing.*

**CIS 411. Computer Forensics for Business.** 3 credits. *Offered spring.*

Study of the tools and techniques required to analyze the current and past contents of computer data storage devices. The course will cover the structure and formats of storage devices and the techniques used to manage storage devices and data. It will also include securing of the data and preparation for legal presentation of evidence. Analysis will include the audits of computer activity and audits of operating system logs. *Prerequisite or corequisite: CIS 301 and junior or senior standing.*

**CIS 420. Computer-Based Networking.** 3 credits. *Offered spring.*

An introduction to computer-based networks that incorporates data, voice and video traffic between computer systems and users. Topics include the theory, design and operation of local area networks, wide area networks and private branch exchange systems. *Prerequisite: CIS 320.*

**CIS 424. Computer Security Management.** 3 credits. *Offered spring.*

Instruction and discussion in the design, development and implementation of a computer security program including legal and ethical considerations. *Prerequisites: CIS 221 and CIS 304.*

**OM 426. Supply Chain Management.** 3 credits. *Offered as needed.*

Supply Chain Management is the integration of the intra- and inter-company processes through which goods and services are delivered to customers. Topics include planning and designing the supply chain, managing materials, supply chain information systems, supply chain e-business, and managing relationships among the participants. *Prerequisite: COB 300.*

**CIS 434. Information Technology Consulting.** 3 credits. *Offered fall.*

This course investigates the tools used by and skills necessary for information technology consultants. The class will use a team-oriented project approach. Teams will be assigned professional consulting firms as manager/mentors and will work with their manager/mentor firm to complete projects that cover each phase of the consulting life cycle. *Prerequisite: Permission of the instructor.*

**MS 450. Issues in Operations Management.** 3 credits. *Offered as needed.*

A capstone course for operations management majors. Focus is on the integration of the disciplines of management and decision sciences to a variety of problem situations. Extensive use of case studies, field trips and applied projects develop problem-solving expertise at the strategic, tactical and operating levels in both manufacturing and service organizations. *Prerequisite: MS/MGT 370, MS 426, MS 481 or permission of the program director.*

**CIS 454. Systems Analysis and Design.** 3 credits. *Offered fall and spring.*

An introduction to the techniques of systems analysis and design. Emphasizes concept of system life cycle and importance of users in system design. *Prerequisite: Declared CIS major or minor. Corequisite or prerequisite: CIS 330.*

**CIS 464. Information Systems Project Management.** 3 credits. *Offered spring.*

Students will develop knowledge and expertise applying techniques and tools used by systems analysts and project managers to plan and manage information systems implementations. *Corequisite: CIS 221 or CS 139 or ISAT 252 or permission of instructor.*

**CIS 466. Advanced Web Development.** 3 credits. *Offered as needed.*

This course provides students with understanding and practical experience in server-side programming issues for Web-enabled database and e-commerce application development. Principal topics include receiving and responding to requests from browsers, connecting to database servers via middleware software, and scripting business rules and application logic on a Web server. E-commerce business issues, security implementations and object-oriented design are also covered. *Prerequisites: CIS 366 and CIS 330 (CIS 330 can be taken concurrently) or declared CIS minor.*

**OM 481. Operations Planning and Control.** 3 credits. *Offered as needed.*

The design and management of planning and control systems for manufacturing and service organizations. Topics include advanced issues in MRP, JIT, capacity planning, scheduling, demand management, forecasting, inventory management and logistics. Case studies, simulation and projects are used to develop and analyze planning and control activities in business organizations. *Prerequisites: COB 300 and junior or senior standing.*

**CIS 484. Information Systems Development and Implementation.**

3 credits. *Offered fall and spring.*

Comprehensive development and implementation of enterprise-level systems using object-oriented methodologies, database driven architectures, systems analysis and design procedures, and project management skills. Topics covered will include advanced programming techniques, database processing, GUI design, object communication and a comprehensive group capstone project. *Corequisite: CIS 454. Prerequisites: CIS 331 with a grade of "C" or better and CIS 330 with a grade of "C" or better.*

**CIS/MS 490. Special Studies in Information Technology and Management Sciences.** 1-3 credits. *Offered fall and spring.*

An advanced course in information and/or decision sciences designed to give qualified students an opportunity to complete independent study under faculty supervision. *Prerequisites: Senior standing, recommendation of the instructor and written approval of the director prior to registration.*

**CIS/MS 496. Internship in Information Technology and Management Science.** 3 credits. Credit/No credit. *Offered fall and spring.*

An advanced course designed to give supervised practical experience in an operating data processing environment. Does not count toward the major. May be repeated. Pass/Fail only. *Prerequisites: Minimum 2.80 GPA, CIS/MS major and permission of the department head.*

**CIS 498. Special Topics in Computer Information Systems.**3 credits. *Offered fall and spring.*

An advanced course designed to allow exploration of current topics in information and/or decision sciences. Course content will vary. See adviser for current content. *Prerequisite: Permission of the instructor.*

**MS 498. Special Topics in Management Science.** 3 credits. *Offered fall and spring.*

An advanced course designed to allow exploration of current topics in information and/or decision sciences. Course content will vary. See adviser for current content. *Prerequisite: Permission of the instructor.*

**CIS/OM 499. Honors.** 6 credits. *Offered fall and spring.*

Year course.

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## Computer Science

**Department of Computer Science****CS 110. Introduction to Computer Professionalism and Ethics.**1 credit. *Offered fall.*

Seminar for first year students and transfer students focusing on professional and ethical issues in computer science. Topics include computer science degree requirements, the computer science profession, ethics of computing professionals, protection of software, Internet security and privacy issues, and current issues in computer science.

**CS 139. Algorithm Development (3, 2).** 4 credits. *Offered fall and spring.*

Students learn fundamental problem-solving techniques using computer software tools that support algorithm development and procedural abstraction to analyze a domain and create reusable software applications.

**CS/MATH 227-228. Discrete Structures I-II.** 3 credits each semester.*CS/MATH 227 offered fall and spring; CS/MATH 228 offered fall.*

An introduction to discrete mathematical structures including functions, relations, sets, logic, matrices, elementary number theory, proof techniques, basics of counting, graphic theory, discrete probability, digital logic, finite state machines, integer and floating point representations. *Prerequisite for CS/MATH 228: CS/MATH 227.*

**CS 239. Advanced Computer Programming (3, 2).** 4 credits.

Students use various advanced problem-solving strategies to develop algorithms using classes and objects. Students also learn how to implement and use elementary data structures, including character strings, records, files, stacks and queues. *Prerequisite: CS 139 or equivalent with a grade of "C" or better.*

**CS 240. Algorithms and Data Structures.** 3 credits. *Offered fall and spring.*

Students learn to implement and analyze elementary data structures and the basic complexity classes of algorithms that use strategies such as greedy algorithms, divide-and-conquer algorithms and backtracking algorithms. This analysis is especially applied to problems in searching, sorting and parsing. *Prerequisites: CS/MATH 227 and a grade of "C" or better in CS 239.*

**CS 252. Discrete Structures.** 3 credits. *Not currently offered.*

Introduction to the mathematical structures used in computer science. Topics include logic and set theory, algebraic structures, automata theory and computability. *Prerequisite: CS 139.*

**CS 274. Introduction to Databases.** 3 credits. *Offered spring only.*

Students learn how to design and implement a normalized relational database. Emphasis is on the practical construction of an interactive database using graphical user interfaces and report generation.

**CS 280. Projects in Computer Science.** 1-3 credits. *Offered as demand warrants.*

Projects or topics in computer science which are of interest to the lower division student. May be repeated for credit when course content changes. Topics may vary. *Prerequisite: Students should consult the instructor prior to enrolling for the course.*

**CS/CIS 320. Telecommunications and Information Processing.** 3 credits.*Offered fall and spring.*

Instruction and cases in the design, development and management of telecommunications topics and office information processing. *Prerequisite: CIS 304, ISAT 252, CS 139 or declared CIS minor.*

**CS 340. Assembly Language Programming.** 3 credits. *Offered as demand warrants.*

Principles of assembly language programming. Assembly language contrasted with machine language. Assembly directives, conditional assembly and macros. Design of a two-pass assembler. The material in this course is useful for those interested in machine design, operating systems, embedded computer systems and microcontrollers, and other areas which require low-level knowledge of computer operation. *Prerequisite: CS 139.*

**CS/ISAT 344. Intelligent Systems.** 3 credits. *Offered fall and spring.*

In-depth introduction to current and future intelligent systems, including expert systems, neural networks, hybrid intelligent systems, and other intelligent system technologies and their development, uses and limitations. *Prerequisite: CS 239 or ISAT 340.*

**CS/ISAT 345. Software Engineering.** 3 credits. *Offered fall and spring.*

Study of means for the development and maintenance of high quality software products delivered on time and within budget. Topics include requirements analysis and specification, software design, implementation, testing, maintenance, project management, ethics and the responsibilities of software engineering professionals. *Prerequisites: ISAT or CS major or minor standing and CS 139 or ISAT 340 with sophomore standing.*

**CS 347. Web-Based Information Systems.** 3 credits. *Offered fall.*

This course covers the design and development of applications intended for deployment over the World Wide Web. Students will examine Web protocols, the architecture of Web-based applications, the languages and facilities with which they are developed, and related issues such as security and reliability. Students will also work in teams using a representative suite of development tools and languages to design and construct a simple client/server application that includes a GUI and a database interface. *Prerequisites: CS 239 with a grade of "C" or better and CS 345.*

**CS 349. Developing Interactive Multimedia.** 3 credits. *Offered fall.*

Students learn the concepts of multimedia, the issues in designing multimedia to interact effectively with users, the performance and speed issues in designing multimedia, and how to implement interactive multimedia applications. *Prerequisite: CS 240.*

**CS 350. Computer Organization.** 3 credits. *Offered spring.*

Students learn how a computer works through principles of hierarchical computer organization, hardware (including registers, busses and arithmetic logic units) machine instruction sets, addressing techniques, input/output processing, and interrupt handling. Students are introduced to the Unix operating system. As part of this course, students will be provided with a version of Unix to install on a personal computer. *Prerequisites: CS/MATH 227 and a grade of "C" or better in CS 239.*

**CS 402. Introduction to Information System Security.** 3 credits. *Offered summer.*

This course provides an introduction to the design and management of operating systems and networks, focusing on those aspects that affect information security. It provides students with the skill or ability to design, execute and evaluate information system security procedures and practices. This course does not satisfy any requirements for majors or minors in computer science. *Prerequisite: CS 139 or equivalent.*

**CS 403 Information Systems Security Management.** 1 credit.

This course covers the basic material needed to maintain an information system. Topics covered include: granting final approval to operate, accreditation of the system and verifying compliance with stated policies and procedures. This course does not satisfy any requirements for majors or minors in Computer Science. *Prerequisite: CS 402 or CS 457.*

**CS 404. Information System Security Administration.** 1 credit.

This course prepares a student to ensure information systems and networks are used securely; to identify and report security incidents; to maintain configuration control of systems and software; and to identify anomalies or integrity loopholes. This course does not satisfy requirements for majors or minors in Computer Science. *Prerequisites: CS 402 or CS 457.*

**CS 405. Information System Security Operations.** 1 credit. *Offered summer.*

This course covers the basic material needed by information system security officers to protect their information systems. Topics covered include: certification, accreditation, site security policy, security policy enforcement and security reporting. This course does not satisfy any requirements for majors or minors in computer science. *Prerequisite: CS 402 or CS 457.*

**CS 406. Assessment of Secure Information Systems.** 1 credit. *Offered summer.*  
This course considers the assessment of the technical and non-technical security features of an information system in an operational configuration. Upon completion of the course, students should be able to identify the assurance levels achieved in meeting all applicable security policies, standards and requirements. This course does not satisfy any requirements for majors or minors in computer science. *Prerequisite: CS 402 or CS 457.*

**CS 430. Programming Languages.** 3 credits. *Offered fall.*  
Several actual programming languages are studied in terms of the fundamental principles of computer programming language design, including object-oriented programming, functional programming, concurrent programming and logic programming. *Prerequisites: CS 240 and CS 350.*

**CS 444. Artificial Intelligence.** 3 credits. *Offered fall.*  
Students will study the history, premises, goals, social impact and philosophical implications of artificial intelligence. Students will study heuristic algorithms for large state spaces and learn to develop recursive and non-deterministic algorithms. *Prerequisite: CS 240.*

**CS 446. Software Analysis and Design.** 3 credits. *Offered spring.*  
Contemporary software analysis and design methods, tools, notations, techniques, processes, principles and practices. Students solve analysis and design problems alone or in teams and present their work to their peers and the instructor. *Prerequisites: CS 240 and CS 345.*

**CS/ISAT 447. Interaction Design.** 3 credits. *Offered fall.*  
Study of and practice with processes, principles, tools, models and techniques for designing interactions between humans and digital products and systems. Topics include physiological and psychological factors affecting interaction design, interaction design processes, interaction models, styles, and paradigms, design notations and representations, prototyping, and interaction design evaluation. *Prerequisite: Junior standing.*

**CS/MATH 448-449. Numerical Mathematics and Computer Applications.** 3 credits each semester.

Numerical solutions and error analysis of typical problems such as finding zeros of nonlinear functions, solving systems of linear and nonlinear equations, interpolation, approximation, integration, solving ordinary differential equations, optimization, and Monte Carlo methods. *Prerequisites for CS/MATH 448: MATH 237, MATH 300 and MATH 248. Prerequisites for CS/MATH 449: CS/MATH 448 and MATH 336.*

**CS 450. Operating Systems.** 3 credits. *Offered fall.*  
Systems programming and operating systems Network environments, windowing environments, user interfaces. Memory management, process management, file system management and device management. *Prerequisite: CS 350.*

**CS 452. Design and Analysis of Algorithms.** 3 credits. *Offered spring.*  
An introduction to the analysis, design and theory of algorithms. Algorithms studied will be selected from searching, sorting and graph theory. Included are elements of counting, recurrence relations, direct and indirect proofs, recursion, complexity classes, language theory, decidability and undecidability. *Prerequisites: CS/MATH 228 and CS 240.*

**CS 454. Internship in Computer Science.** 1-3 credits. *Offered summer.*  
An advanced course to give supervised practical experience in a professional computing environment. May be taken multiple times for credit, but no more than three credits may be used in the computer science program graduation requirements. *Prerequisites: Junior standing, major in computer science and permission of the instructor.*

**CS 457. Information Security.** 3 credits. *Offered fall.*  
This course covers the basic issues of information system security. The roles of planning, management, policies, procedures and personnel in protecting the confidentiality, integrity and availability of information are described. Specific threats (malicious code, network attacks and hostile content) and widely used countermeasures (access control, mechanisms, firewalls, intrusion detection systems) are also discussed. *Prerequisite: CS 450.*

**CS 458. Cyber Defense.** 3 credits. *Offered spring.*  
A hands-on, lab-based learning experience in which the students engage in a series of mini projects to perform security assessment, penetration testing and hardening of networked systems. Students also participate in a cyber defense exercise. *Prerequisites: CS 457 and CS 460.*

**CS/ISAT 460. Local Area Networks.** 3 credits. *Offered fall and spring.*  
An overview of LAN hardware, LAN topology and design, and LAN protocols. Installation and management of LAN operating systems and LAN services (address management, name management, file and print sharing, account management). *Prerequisite: CS 350 or CS/CIS 320 or equivalent.*

**CS/ISAT 461. Internetworking.** 3 credits. *Offered spring.*  
Wide Area Network (WAN) and Metropolitan Area Network (MAN) design. Audio, voice, data and TV transmission over ATM/B-ISDN networks. The SONET signal hierarchy and Q3 standard interface model. Network security. Performance analysis of a given network. *Prerequisite: CS/ISAT 460.*

**CS/ISAT 462. Network Applications Development.** 3 credits. *Offered spring.*  
Design and implementation of network-based applications using languages and architectures such as sockets, JAVA, TL1 and CORBA. Concepts in distributed processing, including synchronization of interprocess communication and management of replicated data. Analysis of performance issues related to distributed applications. *Prerequisites: CS/ISAT 460 and either CS 239 or CIS 344.*

**CS/ISAT 463. Network Analysis and Design.** 3 credits. *Offered spring.*  
In-depth introduction to the techniques and tools used to design and analyze computer and telecommunications networks. Overview of issues related to network performance, including the impact on cost, reliability and security. *Prerequisites: CS/ISAT 460 and either CS 239 or ISAT 340.*

**CS/ISAT 464. Issues in the Telecommunications Business.** 3 credits. *Offered spring.*  
Addresses complex business concepts and issues in the telecommunications industry. Explores the interrelation of the economics of the telecommunications industry with ensuing social, ethical and security issues. Discusses topics in product and service creation, marketing, customer service and billing, and electronic commerce. *Prerequisites: CIS 320, SMAD 356, and ISAT 340 or equivalent.*

**CS 474. Database Design and Application.** 3 credits. *Offered spring.*  
Students study database design and management with emphasis placed on data definition languages, data manipulation languages, query languages and management of the database environment. *Prerequisite: CS 345, CS 274 or ISAT 340.*

**CS 475. Distributed Database Management.** 3 credits. *Offered spring.*  
Students learn the concepts of client-server architectures and other aspects that arise in the design of distributed database systems. *Prerequisite: CS 474.*

**CS 476. Database Administration.** 3 credits. *Offered spring.*  
Students learn to administer a database by manipulating physical and logical components of a database management system. Topics include creation of an instance, managing of tables, indexes, privileges, profiles and roles. *Prerequisite: CS 474.*

**CS 480. Selected Topics in Computer Science.** 1-3 credits. *Offered as demand warrants.*  
Topics in computer science which are of interest but not otherwise covered in the regular computer science offerings of the department. Offered only with the approval of the department head; may be repeated for credit when course content changes. *Prerequisite: CS 239. Topics selected may dictate further prerequisites; students should consult the instructor prior to enrolling for course.*

**CS 482. Selected Topics in Information Security.** 1-3 credits. *Offered spring.*  
Topics in information security. Offered only with the approval of the department head; may be repeated for credit when course content changes. *Prerequisite: CS 240 and CS 350. Topics selected may dictate further prerequisites; students should consult the instructor prior to enrolling for the course.*

**CS 488. Computer Graphics Applications.** 3 credits. *Offered as demand warrants.*  
This course develops a computer graphics application package based on standard graphics functions as well as attributes of a graphical user interface. It includes experience in applying interactive computer graphics techniques to industrial problems. *Prerequisites: CS 240 and CS 350.*

**CS 497. Independent Study.** 1-3 credits. *Offered fall and spring.*  
An advanced course to give independent study experience under faculty supervision. May be taken multiple times for credit, but no more than three credits may be used in the computer science program graduation requirements. *Prerequisites: Junior standing, major in computer science and permission of the program coordinator.*

**CS 499. Honors.** 6 credits. *Offered fall and spring.*  
Year course.

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## Criminal Justice

### Department of Justice Studies

#### CRJU 215. Introduction to Criminal Justice. 3 credits.

An introduction to the development of the American criminal justice system from early English beginnings to the present in its three dimensions: police, courts and corrections.

#### CRJU 301. Special Topics in Criminal Justice. 3 credits.

This course provides an examination of topics that are of current interest in the field of criminal justice. The class may be repeated for credit when course content changes.

#### CRJU/SOCI 325. Criminology. 3 credits. *Offered fall and spring.*

Study of the extent, causes and possible deterrents to crime including murder, assault, white-collar offenses and organized crime with attention to the role of the victim and policy implications.

#### CRJU 328. Criminal Procedure. 3 credits.

Study of the criminal justice process from arrest through appeal with emphasis upon the rights of the accused including due process, the right to counsel, search and seizure, and the privilege against self-incrimination. *Prerequisite: POSC 210 or PUAD 215.*

#### CRJU 329. Criminal Investigation and Evidence. 3 credits.

Characteristics, legal aspects, organizational objectives, theories and systematic procedure of criminal investigation. Includes a survey of the investigative function, interviewing witnesses, interrogation, physical evidence, the investigation of common serious offenses and the principles of evidence, including the legal rules controlling the presentation of evidence in court.

#### CRJU 401. Internship in Criminal Justice. 4 credits. *Offered each semester as requested.*

This course allows students to receive academic credit for work experienced in an agency or organization related to the criminal justice minor. Students should consult the director of the criminal justice minor for assistance in arranging approved internships.

#### CRJU 496. Internship in Criminal Justice. 4 credits. *Offered each semester as requested.*

Provides students with an opportunity for experiential learning in an agency setting. Research paper required. *Prerequisite: Permission of instructor.*

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## Continuing Education

### Outreach Programs

#### CE 490. Special Studies in Continuing Education. 1-3 credits.

This course is designed to allow exploration of current topics of interest including various trends and issues in a given field of study.

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## Dance

### School of Theatre and Dance

#### DANC 110. Associate Group Dance Repertory I (0, 4). 1 credit. *Offered fall.*

Introduction to group dance experiences through rehearsal, performance, dance technique training and technical theatre practice. *Prerequisites: Permission of the instructor and concurrent enrollment in a dance technique course.*

#### DANC 140. Elementary Modern Dance (0, 4). 2 credits. *Offered fall and spring.*

Emphasis on modern dance technique and fundamentals of improvisation and choreography. May be repeated for credit.

#### DANC 142. Elementary Ballet (0, 4). 2 credits. *Offered fall and spring.*

Fundamentals of ballet technique, basic vocabulary and combinations. May be repeated for credit.

#### DANC 143. International Folk Dance (0, 4). 2 credits. *Offered fall and spring.*

Traditional folk dance steps and international folk dances. Emphasis on dances from eastern and western Europe, Mexico and Israel. May be repeated for credit.

#### DANC 144. Ballroom Dance (0, 4). 2 credits. *Offered fall and spring.*

Ballroom dance skills including steps, styling and leading, and following for American and Latin ballroom dance forms. May be repeated for credit.

#### DANC 146. Jazz Dance (0, 4). 2 credits. *Offered fall.*

Fundamentals of jazz technique, basic vocabulary and combinations. May be repeated for credit.

#### DANC 147. Tap Dance (0, 4). 2 credits. *Offered fall.*

Fundamentals of tap dance, basic vocabulary and combinations. May be repeated for credit.

#### DANC/THEA 171. Performance Production. 3 credits. *Offered fall and spring.*

An introduction to the methods of the production of scenery, properties, costumes, lighting, sound and performance management for theater and dance performances. Instruction in the skills required for the operation of associated tools and equipment and instruction in the skills required for the operation of lighting and sound equipment will be taught.

#### DANC 210. Associate Group Dance Repertory II (0, 4). 1 credit. *Offered spring.*

Practice in group dance experiences through rehearsal, performance, dance technique training and technical theatre practice. *Prerequisites: DANC 110 or the equivalent and concurrent enrollment in a dance technique course.*

#### DANC 211. Contemporary Dance Ensemble Repertory I (0, 4). 2

credits. *Offered fall and spring.*

Introduction to a modern dance ensemble with performance, choreographic and technical theatre experiences. May be repeated for credit. *Prerequisites: Permission of the instructor and concurrent enrollment in a dance technique course.*

#### DANC 212. Virginia Repertory Dance Company I (0, 4).

2 credits. *Offered fall and spring.*

Rehearsal, performance and technical theatre experiences in a modern dance company. May be repeated for credit. *Prerequisites: Permission of the instructor and concurrent enrollment in a dance technique course.*

#### DANC 240. Intermediate Modern Dance I (0, 4). 2 credits. *Offered fall*

*and spring.*

Intermediate skills in modern dance technique. May be repeated for credit. *Prerequisite: DANC 140 or permission of the instructor.*

#### DANC 242. Intermediate Ballet I (0, 4). 2 credits. *Offered fall and spring.*

Intermediate skills in ballet technique. May be repeated for credit. *Prerequisite: DANC 142 or permission of the instructor.*

#### DANC 245. Dance Improvisation (0, 4). 2 credits. *Offered fall.*

Development of individual, group and environmental awareness; extension of individual movement vocabulary; and theory and exploration of the interrelationships of the visual and theatre arts through structured improvisation.

#### DANC 246. Intermediate Jazz. 2 credits. *Offered spring.*

Intermediate skills in jazz dance technique, vocabulary and movement combinations. May be repeated for credit. *Prerequisite: DANC 146 or permission of the instructor.*

#### DANC 247. Intermediate Tap. 2 credits. *Offered once every other year.*

Intermediate skills in tap dance technique, vocabulary and models of sequencing. May be repeated for credit. *Prerequisite: DANC 147 or permission of instructor.*

#### DANC 248. History of Dance: Renaissance Through the 20th

Century. 3 credits. *Offered spring.*

A survey of dance history in Western civilization from the Renaissance to the present. Emphasis is on the dance idioms of ballet and modern.

#### DANC 311 Contemporary Dance Ensemble Repertory II (0, 4).

2 credits. *Offered fall and spring.*

Intermediate-level experiences in performance, choreography and technical theatre with a modern dance ensemble. May be repeated for credit. *Prerequisites: DANC 211 or the equivalent and concurrent enrollment in a dance technique course.*

#### DANC 312. Virginia Repertory Dance Company II (0, 4). 2 credits.

*Offered fall and spring.*

Advanced rehearsal, performance and technical theatre experience in a modern dance company. May be repeated for credit. *Prerequisites: Permission of the instructor and concurrent enrollment in a dance technique course.*

#### DANC 320. Anatomy and Somatic Studies for the Dancer. 3 credits.

*Offered fall.*

An introduction to the structure and function of the human body, along with an overview of contemporary bodywork theories and techniques essential to the education of dancers. Emphasis will be on the application of knowledge within the context of dance technique.