

4660. Introduction to Computational Chemistry. 3 hours. (2;3) Introduction to the use of modern computational methodologies for the study of physical properties and chemical reactions of importance in chemistry, biochemistry, molecular biology and environmental sciences. Prerequisite(s): CHEM 3520 (should be taken concurrently) or consent of department.

4670. Introduction to Medicinal Chemistry. 3 hours. Fundamentals of medicinal chemistry. General aspects of drug action and rational drug design. Drug development, antibacterial agents, analgesics, antidepressants and anticancer agents. Prerequisite(s): CHEM 2380 or CHEM 3601 with consent of department.

4700. Procedures and Materials for Science Instruction. 3 hours. (2;4) Problems, techniques and procedures for classroom and laboratory experiences based on current science education research. Recommended for students who are obtaining secondary teacher certification in a science field. Field experience in the public schools is required. Prerequisite(s): 16 hours of chemistry, completion of freshman and sophomore science courses required for certification, and consent of department. Does not count as an elective toward a major or minor in chemistry except for students seeking certification. (Same as BIOL 4700 and PHYS 4700.)

4900-4910. Special Problems. 1-3 hours each. Prerequisite(s): CHEM 3220 or equivalent, and consent of directing professor. A written report is required each term/semester. May be repeated for credit, not to exceed 3 hours each.

4920. Cooperative Education in Chemistry. 1-3 hours. Supervised work in a job directly related to the student's major, professional field of study or career objective. Prerequisite(s): 12 semester hours of credit in chemistry; student must meet employer's requirements and have consent of the department chair. May be repeated for credit.

4930. Selected Topics in Chemistry. 3 hours. Topics of current interest, which vary from year to year. Prerequisite(s): consent of department. May be repeated for credit as topics vary.

4940. Chemistry Seminar. 1 hour. Colloquia covering current topics in chemistry. Prerequisite(s): chemistry major with senior standing. May be repeated for credit. May not be used to meet degree requirements for chemistry major or minor. Pass/no pass only.

4960-4970. Science Institute (Chemistry). 1-6 hours each. For students accepted by the university in special institute courses. May be repeated for credit, not to exceed 6 hours in each course.

Communication Studies

Students interested in majoring in communication studies must complete all pre-major requirements and must take COMM 3010 prior to or concurrently with the first enrollment in upper-division courses.

Communication Studies, COMM

1010 (SPCH 1311). Introduction to Communication. 3 hours. (1;0;2) A survey of the basic principles of human communication, with opportunities to apply these principles in different contexts. *Satisfies the Communication requirement of the University Core Curriculum.*

1440. Honors Classical Argument. 3 hours. Uses of argument in rational decision making based on classical theories of reason. Elements of argument, classical

foundations of argument and contemporary application of argument principles. Prerequisite(s): acceptance to University Honors Program. *Satisfies the Communication requirement of the University Core Curriculum.*

2020 (SPCH 1318). Interpersonal Communication. 3 hours. An introduction to interpersonal communication research results and theories with application in two-person and small group relationships in a variety of human communication contexts. *Satisfies the Communication requirement of the University Core Curriculum.*

2040 (SPCH 1315). Public Speaking. 3 hours. (1;0;2) Introduction to principles of and practice in preparing public speaking speeches. Stresses the role of public speaking in democratic decision making. *Satisfies the Communication requirement of the University Core Curriculum.*

2060 (SPCH 2341). Performance of Literature. 3 hours. (1;0;2) Performance as a method of textual study. An introduction to the theory and practice of analyzing, rehearsing and performing non-dramatic texts. Recommended for elementary education majors. *Satisfies the Communication requirement of the University Core Curriculum.*

2140. Rhetoric and Argument. 3 hours. (1;0;2) Introduction to the critical dimensions of rhetoric and argument through presentation and evaluation of public discourse. Balanced attention to the theory and practice enabling students to analyze the persuasive function of public discourse; to discuss the role of audience in the construction of public discourse; and to develop skills for constructing, supporting, and evaluating public discourse. Prerequisite(s): COMM 1010.

2900. Special Problems. 1-3 hours.

3010. Communication Perspectives. 3 hours. Skills and concepts necessary to review communication research, to engage in critical research about communication behavior, and to write scholarly papers in an appropriate format. Restricted to COMM majors, this course is a requirement for students under the 2000-01 (or later) catalog and must be taken prior to or concurrently with a student's first enrollment in upper-division COMM courses. Prerequisite(s): COMM 1010, 2020, 2060 and 2140 with a grade of C or better. Communication majors only.

3120. Nonverbal Communication. 3 hours. Applications of research and theory in understanding the impact of nonverbal communication in a variety of human contexts. Prerequisite(s): COMM 1010 and 2020.

3220. Health Communication. 3 hours. Communication in medical settings; origins, nature and impact of communication practices and beliefs in the health-care delivery system; role of interaction on human well-being. Prerequisite(s): COMM 1010 and 2020.

3260. Storytelling. 3 hours. Investigation of folk literature, original sources and literary genres employed in the art of storytelling. Training in the acquisition of techniques and skills employed by the storyteller. Prerequisite(s): COMM 1010 and 2060.

3265. Topics in Storytelling. 3 hours. Understanding how the art of storytelling influences and supports the development of diverse cultures. Comparison and contrast of storytelling traditions of at least three different groups related by geography (i.e. Americas, Asia or Africa) or topic (fairy tales, family stories or creation myths). Performance and analysis of narratives develops performance skills and sharpens critical thinking skills. Provides opportunities to participate in performances as a researcher, adapter, performer and critic. Prerequisite(s): COMM 1010, 2060 and 3260. May be repeated for credit as topics vary.

3320. Communication and Conflict Management.

3 hours. Examination of the role of communication in the effective management of conflict and introduction to basic mediation topics such as gender, intercultural and nonverbal communication. Study of conflict in various common contexts: intrapersonal, interpersonal, group and organizational. Prerequisite(s): COMM 1010 and 2020.

3340. Methods of Rhetorical Criticism. 3 hours. A survey of significant methodologies available to rhetorical critics. Emphasis on the critical abilities necessary to describe, explain, analyze, and evaluate symbolic influence in the public sphere. Prerequisite(s): COMM 1010 and 2140.

3440. Public Address Studies. 3 hours. Major theories of public address and the critical assessment of selected persuasive addresses in the public arena. Prerequisite(s): COMM 1010, 2040 and 2140.

3520. Advanced Interpersonal Communication. 3 hours. Advanced study of interpersonal communication research, focusing on theory and application in a variety of contexts. Prerequisite(s): COMM 1010 and 2020.

3620. Intercultural Communication. 3 hours. Knowledge and skills designed to increase intercultural communication competence. Investigation into the ways in which culture interrelates with and affects communication processes. Examines affective, behavioral and cognitive processes involved in intercultural learning. Prerequisite(s): COMM 1010 and 2020.

3720. Small Group Communication. 3 hours. (2;0;1) Theory, research and laboratory experience in small group communication; problems in group discussion; decision-making techniques. Prerequisite(s): COMM 1010 and 2020.

3760. Performance Methods. 3 hours. Advanced topics in individual performance as a method of textual study as well as theory and practice in individual performance as an aesthetic event and as a rhetorical and social act. Prerequisite(s): COMM 1010 and 2060.

3840. Argumentation and Debate. 3 hours. (2;0;1) Theory, research and practice in developing and presenting arguments on public policy issues; reasoning, strategy and oral advocacy. Prerequisite(s): COMM 1010, 2040 and 2140.

3860. Group Performance. 3 hours. Theory and practice in analyzing texts, adapting and compiling scripts, and directing and rehearsing productions. Group performance is studied from three perspectives: as a method of textual study, as an aesthetic event, and as a social and rhetorical act. Prerequisite(s): COMM 1010 and 2060.

3920. Organizational Communication. 3 hours. Principles of communication applied in the organizational environment. Focus upon diagnosis, analysis, and resolution methods related to communication-based problems with organizations. Prerequisite(s): COMM 1010 and 2020.

4020. Communication Theory. 3 hours. Process of theory construction with particular emphasis on human communication, elements and types of theories, theoretical logics, metatheoretical perspectives toward communication, and specific content theories of communication. Prerequisite(s): COMM 1010 and 2020.

4021. Communication Research Methods. 3 hours. Experimental and quantitative techniques usable in research in communication. Prerequisite(s): COMM 1010 and 2020.

4040. Rhetorical Theory. 3 hours. A study of rhetorical traditions that provide useful insights into how individuals engage in rhetorical transactions. Prerequisite(s): COMM 1010 and 2140.

4060. Performance Theory. 3 hours. Examination and comparison of text-centered, performer-centered and audience-centered theories of performance; functions of performance; and methods for evaluating performance. Prerequisite(s): COMM 1010 and 2060.

4065. History of Performance Theory. 3 hours. Examination of the varied performance techniques, philosophies and conventions that have contributed to the formation of contemporary performance theory and practice. Covers approaches from classical to contemporary solo performance styles. Provides the opportunity to engage these performance traditions critically through discussion, analysis and creative reconstruction. Prerequisite(s): COMM 1010, 2060 and 3760.

4220. Gender and Communication. 3 hours. Examination of differences in communication behavior of males and females with particular reference to biological sex and psychological gender. Explores male and female communication in a variety of different contexts. Prerequisite(s): COMM 1010 and 2020.

4240. Rhetoric, Culture and Ideology. 3 hours. Consequences of discourse on culture. May include communication throughout the life cycle, rhetorical creation and maintenance of social movements, international and intercultural rhetoric, feminist rhetorical criticism, ideological criticism, the rhetorical aspects of popular culture and the grounds for the criticism of culture from a rhetorical perspective. Prerequisite(s): COMM 1010 and 2140.

4260. Performance and Culture. 3 hours. Examination of the role of performance in cultures. Research and analysis of texts and performance practices among various ethnic and cultural groups. *Satisfies the Cross-cultural, Diversity and Global Studies requirement of the University Core Curriculum.*

4340. Rhetoric and Politics. 3 hours. Rhetoric of political campaigns, presidential rhetoric, legal communication, and the rhetorical creation, maintenance, use and legitimization of symbolic power. Prerequisite(s): COMM 1010, 2140 and 3340.

4360. Rhetoric of Performance. 3 hours. Contemporary performance as a critical and persuasive tool within social contexts. Research and analysis of performance texts and contexts designed to criticize social or cultural practices. Prerequisite(s): COMM 1010 and 2060.

4420. Communication and Relational Development. 3 hours. The role of communication processes in initiating, developing, defining, maintaining and dissolving various forms of human relationships. Examines the nature of communication in a variety of relational contexts. Prerequisite(s): COMM 1010 and 2020.

4440. Issues in Freedom of Speech. 3 hours. Theories, doctrines, statutes and cases related to the First Amendment guarantee of freedom of speech. Prerequisite(s): COMM 1010 and 2140.

4800. Communication Internship. 1-3 hours. (0;0;1-3) Supervised work in a job directly related to the student's major, professional field of study or career objective. Prerequisite(s): communication studies major; junior or senior classification; minimum GPA of 3.0 on courses taken at UNT; completion of department core plus at least 6 upper-level hours in communication studies at UNT; student must meet employer's requirements and have consent of department internship supervisor. May be repeated, but a maximum of 3 semesters credit hours of internship credit may be applied to the major in communication studies. Pass/no pass only.

4829. Topics in Communication Processes. 3 hours.

Rotating topics in interpersonal communication, organizational communication, or communication research methods. Prerequisite(s): COMM 1010 and 2020. May be repeated for credit as topics vary.

4849. Topics in Rhetorical Studies. 3 hours. Investigation of various topics related to the study of humans using symbolic discourse to influence others. Theory and application using qualitative and historical/critical methodologies. Prerequisite(s): COMM 1010 and 2140. May be repeated for credit as topics vary.

4869. Topics in Performance Studies. 3 hours. Rotating topics may include: performance of particular genres, including poetry narrative, drama or non-literary texts; performance methods, including thematic approaches to performance or historical styles of performance; or theoretical issues in performance, including narrative theory, intertextuality or New Historicism. Prerequisite(s): COMM 1010 and 2020. May be repeated for credit as topics vary.

4900-4910. Special Problems. 1-3 hours each. Prerequisite(s): problem must be approved by department chair.

4950. Senior Honors Thesis. 3 hours. Available to COMM majors having completed at least 90 semester hours with an overall GPA of 3.50 or better. Prerequisite(s): COMM 4020 and 4021, or 3340 and 4040, or 4060.

Community Service

see Public Affairs and Community Service

Composition, Music

see Music

Computer Education and Cognitive Systems

see Technology and Cognition

Computer Engineering

see Computer Science and Engineering

Computer Science and Engineering

Computer Science and Engineering, CSCE

1010. (COSC 1300 or 1400) Introduction to Computer Science. 3 hours. (2;0;1) A basic course covering logical operation and organization of digital computers, computer hardware and software, number systems, and application software packages. May not be counted toward computer science and engineering major or minor.

1020. (COSC 1315 or 1415) Program Development. 4 hours. (3;1) Introduction to problem-solving, algorithms and programming in a high-level language. May not be counted toward a computer science major or minor. Prerequisite(s): high school algebra or equivalent.

1030. (COSC 1436) Computer Science I. 4 hours. (3;1) Introduction to computer science and engineering, problem-solving techniques, algorithmic processes, software design and development. Prerequisite(s): high school algebra or equivalent.

1040. (COSC 1337) Computer Science II. 3 hours. Continuation of CSCE 1030. Software design, structured programming, object oriented design and programming. Prerequisite(s): CSCE 1030 and MATH 1650 (may be taken concurrently).

2050. (COSC 2336) Computer Science III. 3 hours. Elementary data structures, practice in software design, implementation and testing with emphasis on creating and modifying larger programs. Prerequisite(s): CSCE 1040.

2410. Programming Laboratory. 1-4 hours. Practice with computer languages and processing techniques. Prerequisite(s): CSCE 1040 or BCIS 3620 or BCIS 3690.

2610 (COSC 2325). Computer Organization. 3 hours. Principles of computer systems organization, instruction sets, computer arithmetic, data and control paths, memory hierarchies. Prerequisite(s): CSCE 2050. Co-requisite(s): ELET 2720.

2900. Special Problems in Computer Science and Engineering. 1-4 hours. Individualized instruction in theoretical or experimental problems. For elective credit only.

3010. Signals and Systems. 3 hours. Fourier Series, Fourier and Laplace transforms with emphasis on their physical interpretation. System representation by transfer functions and impulse response functions. Convolution integral. Transient response, discrete time signals and systems, sampling techniques, Z and discrete Fourier transforms. Use of software tools for analysis is integral to this course. Prerequisite(s): MATH 2730 and ENGR 2405.

3020. Fundamentals of Communication Theory. 3 hours. Introduction to the concepts of transmission of information via communication channels. Amplitude and angle modulation for the transmission of continuous-time signals. Analog-to-digital conversion and pulse code modulation. Transmission of digital data. Introduction to random signals and noise and their effects on communication. Optimum detection systems in the presence of noise. Prerequisite(s): CSCE 3010 and MATH 1780.

3030. Parallel Programming. 3 hours. Introduction to processing in parallel and distributed computing environment. General concepts of parallel machine models, processes, threads, mutual exclusion, synchronization, message passing. Design and analysis of parallel algorithms for engineering and scientific applications. Parallel programming using Pthreads and MPI. Prerequisite(s): CSCE 2050.

3110. Data Structures and Algorithms. 3 hours. Computer storage structures; storage allocation and management; data sorting and searching techniques; data structures in programming languages. Prerequisite(s): CSCE 2050 and MATH 2770.

3210. Symbolic Processing. 3 hours. Introduction to symbolic processing using LISP, Prolog or related languages; recursion; building abstractions with data; modularity, objects and state; meta-linguistic abstraction. Prerequisite(s): CSCE 3110.

3300. File Organization and Processing. 3 hours. File design and implementation; operating systems, survey of peripheral device characteristics, sorting, information storage and retrieval, list processing and direct access techniques, job control language, and security and privacy. Prerequisite(s): CSCE 3110.