814. Wastewater Treatment Plant Design
Theory and design of wastewater treatment processes, sludge handling, sedimentation basins, trickling filters, aeration tanks, digesters.
816. Treatment of Industrial Wastes
Spring. 4(3-3) S E 804.
Theory of industrial waste management. Application of physio-chemical and biological treatment to selected industries. Examples include: apparel; food processing, materials processing and chemical industry.
822. Air Resource Management
Fall of even-numbered yrs. 4(4-0) S E 802 or concurrently.
Characteristics of air contaminants and noise; sources and source inventory; microclimatology and pollutant transport; pollutant effects, introduction to sampling and control.
830. Special Problems in Environmental Engineering
Fall, Winter, Spring, Summer. 1 to 6 credits. May be repeated for a maximum of 12 credits in C E 680 and S E 880 combined. Approval of department.
Solution of environmental engineering problems, of limited scope not pertaining to thesis.
899. Master's Thesis Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.
924. Air Sampling and Analysis
Spring of odd-numbered yrs. 4(3-3) S E 922.
Theory and design of air sampling programs. Quantitative analysis of ambient air samples and stack samples. Analysis for sulfur oxides, nitrogen oxides and particulates.
999. Doctoral Dissertation Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

CLASSICAL STUDIES
See Romance and Classical Languages.

COMMUNICATION

COM College of Communication Arts and Sciences

100. Human Communication
Fall, Winter, Spring, Summer. 3(3-0).
Process and functions of communication. Principles underlying communication behavior. Practice in analyzing communication situations and in speaking and writing.
115. Oral Communication
Fall, Winter, Spring, Summer. 3(3-0) COM 100 or approval of department.
Principles and practice in adapting to audiences, creating and structuring messages, and developing effective delivery of formal and informal speeches. Critical evaluation of speeches by instructor and peers.
125. Interpersonal Communication
Fall, Winter, Spring, Summer. 3(3-0) COM 100.
Develop students' abilities to become more effective, responsible participants in interpersonal communication relationships, with emphasis on relating communicatively with others.
199. Methods of Inquiry
Fall, Winter, Spring, Summer. 3(3-0) COM 125.
Major theoretical orientations toward communication. Primary tools of scholarly inquiry.
205. Persuasion
Fall, Winter, Spring, Summer. 4(4-0) COM 100.
Process of influencing human behavior through persuasive communication. Experience in creating persuasive messages and in evaluating the acceptability of persuasive attempts.
210. Leadership and Group Communication
Fall, Winter, Spring, Summer. 4(4-0)
COM 100.
Principles and practice in the utilization of communication for effective leadership, with special emphasis on group communication.
250. Argumentation
Fall, Winter, Spring, 4(4-0) COM 190.
Develop students' abilities to use arguments; recent perspectives in argumentation; rhetorical and empirical study of argumentative messages.
299. Individual Projects
Fall, Winter, Spring, Summer. 1 to 15 credits. May be repeated for a maximum of 15 credits in C E 810 and S E 810 combined. Approval of department.
Independent research, experience in communication laboratories, or tutorial work in communication skills.
300. The Effects of Mass Communication
Fall, Winter, Spring, Summer. 4(4-0)
315. Organizational Communication
Fall, Winter, Spring, 4(4-0) COM 100.
Principles and practice in the management of communication systems, with emphasis on conflict resolution, information exchange, innovativeness, and information management.
326. Communication in Business
Fall, Winter, Spring, Summer. 4(4-0) Jruniers.
Study and analysis of business and industrial communication problems; extensive instruction and practice in writing.
350. Signs and Sign-Behavior
Fall, Winter, Spring, 4(4-0) COM 100.
Theories of symbolic behavior. Language structure and communicative functions.
352. Nonverbal Communication
Fall, 4(4-0) COM 100.
Major nonverbal communication codes and functions they perform. Codes: body movement, touch, physical appearance, paralanguage, use of space, time, artifacts. Opportunities to analyze nonverbal communication of self and others.
399. Special Topics in Communication
Fall, Winter, Spring, Summer. 4(4-0)
May be repeated for a maximum of 8 credits. Juniors.
Contemporary issues in communication.
405. Quantitative Strategies in Communication Research
Fall, Spring, 4(4-0) Seniors.
Design and statistical strategies in communication research. Project design and evaluation. Basic data handling and presentation.
410. Classroom Communication
Spring. 3(3-0) Majors and minors or approval of department.
Classroom as a communication system with emphasis on operationalizing philosophies of education in the environment, teacher and student roles and styles, affective and cognitive interactions, methods of systematic observation.
411. Directing the Debate and Forensic Program
Fall. 3(3-0) Majors and minors or approval of department.
Principles of and practice in argumentation: methods of debating and highlighting dramatic contrasts; evaluation of high school tournaments, practices, and student congresses.
413. Seminar in Communication Education
Winter, Summer. 4(4-0) ED 327.
Philosophies of curricular and co-curricular programs in communication education. Internship experience in those programs.
425. Communication Campaign Analysis
Fall. 4(4-0) COM 300 or approval of department.
Design of persuasive and information campaigns. Techniques and strategies for analyzing and managing mass media. Principles and practice in constructing messages and selecting media. Political and public service campaign focus.
430. Information and Technology
Winter. 4(4-0) COM 315 or approval of department.
Concepts and principles of information and information technology, with emphasis on effects on organizational processes.
431. Conflict in Communication
Winter. 4(4-0) COM 125 or approval of department.
Elaboration of theories in conflict resolution; development of strategies to resolve conflict situations; personal analysis of communication patterns that can affect conflict.
460. Critical Perspectives on Communication
(360.) Fall, Winter, Spring. 4(4-0) COM 100.
Interdependence of communication and other societal factors, emphasizing criteria for ethical and social appropriateness.
475. Relational Communication
Spring. 4(4-0) COM 125.
Theories and current research on relational communication, including stages of relational communication development; verbal and nonverbal relational messages of intimacy, similarity, arousal, privacy and dominance; role of culture and context.
499. Special Projects
Fall, Winter, Spring, Summer. 1 to 15 credits. May be repeated for a maximum of 15 credits in C E 810 and S E 810 combined. Approval of project proposal by department.
Independent research, group research, student-directed group projects.
805. Communication Research
Fall. 4(4-0) First year graduate majors.
Communication research strategy and methodology. Scientific process, bases for derivation and verification of hypotheses, and basic methods of designing research in communication.
806. Communication Research
Fall. 4(4-0) COM 805; second year graduate majors.
Continuation of COM 805.
815. Organizational Communication
Winter, Spring. 4(4-0)
Structure and function of communication in organizations, with emphasis on concepts and principles needed for effective management of organizational communication processes.
Descriptions — Communication of Courses

820. Communication Theory and Process
Fall, Summer. 4(4-0)
Theoreric models of communication, with emphasis on the applications of communication theory to various professional communication areas.

821. Mass Communication Theory and Research
Fall, Spring. 4(4-0)
Current behavioral science theories and research, e.g., media institutions, decision-making, media mass exposure patterns, diffusion of news and influence, effective message strategies, political communication, and mass media socialization.

822. Interpersonal Communication
Winter. 4(4-0)
Current theories and research in interpersonal communication. The role of interpersonal communication in such processes as conflict resolution and information exchange will be considered.

828. Cross-Cultural Communication
Fall, Summer. 4(4-0)
Role of communication in the economic, social, and political development of less developed countries. Problems in communicating across cultural boundaries.

830. Nonverbal Communication
Winter. 4(4-0)
A review of theory and empirical research on nonverbal communication. Emphasis on social functions such as impression management, regulation, and social influence.

860. Persuasive Communication
Spring. 4(4-0)
Use of communication to gain compliance and effect social change. Study of persuasion and attitude change from classical theories to contemporary situations.

570. Communication and Change: The Diffusion of Ideas and Information
Fall, Winter. 4(4-0)
Research traditions underlying the diffusion of ideas and information, and acceptance of innovation and change. Strategic principles for introduction of change through the use of communication.

580. Message Behavior, Signs and Communication
Spring. 4(4-0)
Language and message behavior. The nature of messages, their structure, and the contexts (e.g., dyads, groups, organizations) that promote certain message behavior.

590. Special Problems
Fall, Winter, Spring, Summer. 1 to 8 credits. Approval of department.
Special problems as arranged with instructor.

599. Master’s Thesis Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

890. Communication Research Design
Fall, Winter, Spring. 4(4-0) May reenroll for a maximum of 16 credits.
Methods of data collection and analysis in communication research. Designing exploratory studies of the communication process, interviewer training and bias. Content analysis of the mass media. Writing and critiquing research reports.

940. Seminar in Communication Theory and Research
Fall, Winter, Spring, Summer. 2 to 8 credits. May reenroll for a maximum of 45 credits. Approval of department.
Theoreric and research issues in communication.

990. Special Problems
Fall, Winter, Spring. 1 to 6 credits. Approval of department.

999. Doctoral Dissertation Research
Fall, Winter, Spring, Summer. 1 to 36 credits. Approval of department.

COMMUNICATION ARTS AND SCIENCES CAS (COLLEGE OF)

492. Special Topics
Fall, Winter, Spring. 1 to 6 credits. Approval of department.
Varied topics pertaining to the study of communication processes.

522. Principles of Gerontology for Medical Practice
Spring, 3(0) Admission to a college of medicine or approval of department.
An introductory course relating the biological, psychological, and social implications of aging to health care of elderly.

530. Care of the Elderly
Fall, Spring, 3(2-2) Student in H M, OST or other clinical program or approval of instructor. Interdepartmental with and administered by the Department of Family Practice.
Case studies of the care of the elderly based on the physician patient interaction with elderly persons and their families. Family systems applications to health care. Associated clinical experience.

543. Health and Adaptation of the Elderly
Fall. 3(3-0) Bachelor’s degree in health science; approval of instructor. Interdepartmental with and administered by the College of Nursing.
Health and adaptation of the aged individual experiencing the normative biopsychologic and psychosocial changes related to the aging process.

590. Special Problems in Community Medicine
Fall, Winter, Spring, Summer. 1 to 8 credits. May reenroll for a maximum of 32 credits. Approval of department.
Each student will work under direction of a faculty member on an experimental, theoretical or applied problem.

600. Preventive Medicine and Public Health Clerkship
Fall, Winter, Spring, Summer. 2 to 12 credits. Successful completion of first two years of medical school.
Clinical and community experiences in personal and community health services, environmental health, and other health and medical programs which meet health needs of various population groups.