

**814. Wastewater Treatment Plant Design**  
Spring. 4(3-3) C E 370, C E 483, C E 828, S E 804.

Theory and design of wastewater treatment processes. Racks, screens, 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 years. 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.

**880. Special Problems in Environmental Engineering**

Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 12 credits in C E 880 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 years. 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 theoretic 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 199.

Development and use of arguments; recent perspectives in argumentation; rhetorical and empirical study of argumentative messages.

**299. Individual Projects**

Fall, Winter, Spring, Summer. 1 to 15 credits. May reenroll for a maximum of 15 credits. COM 199, approval of project proposal by 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)

Major social effects of mass media on audience behavior. Political communication. Media effects on children. Message strategies producing attitude change. Interrelationship between mass media and interpersonal communication. Decision making in mass media.

**315. Organizational Communication**

Fall, Winter, Spring. 4(4-0) COM 100.

Principles and practice in the management of communication systems, with emphases on conflict resolution, information exchange, innovativeness, and information management.

**326. Communication in Business**

Fall, Winter, Spring, Summer. 4(4-0) Juniors.

Study and analysis of business and industrial communication problems; extensive instruction and practice in writing.

**350. Signs and Sign-Behavior**

Fall, Winter, Spring, Summer. 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 reenroll 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 schema. 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 coaching debate and individual events and managing tournaments; observation of high school tournaments, practices, and student congress.

**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 influencing mass audience. 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 reenroll for a maximum of 15 credits. 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)

Theoretic 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, mass media exposure patterns, diffusion of news and influence, effective message strategies, political communication, and mass media in socialization.

#### 822. *Interpersonal Communication*

Winter, Summer. 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.

#### 870. *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.

#### 880. *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.

#### 890. *Special Problems*

Fall, Winter, Spring, Summer. 1 to 6 credits. Approval of department.  
Special problems as arranged with instructor.

#### 899. *Master's Thesis Research*

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

#### 905. *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.

Theoretic and research issues in communication.

#### 990. *Special Problems*

Fall, Winter, Spring, Summer. 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, Summer. 1 to 6 credits. Approval of department.

Varied topics pertaining to the study of communication processes.

#### 892. *Special Topics*

Fall, Winter, Spring, Summer. 1 to 6 credits. Approval of department.

Varied topics pertaining to advanced study of communication processes.

#### 999. *Doctoral Dissertation Research*

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

Dissertation research for the doctoral program in Mass Media.

## COMMUNITY HEALTH SCIENCE CMS

### College of Human Medicine College of Osteopathic Medicine

#### 512. *Epidemiology and Biostatistics*

Winter. 2 to 5 credits. Admission to a college of medicine or approval of department.

Epidemiology and biostatistics in clinical medicine and health care delivery. Evaluation of medical investigations. Applicability to preventive medicine and health maintenance. Field experiences and seminars in community medicine.

#### 513. *Medical Jurisprudence*

Fall. 2 to 5 credits. Admission to a college of medicine or approval of department.

Basic concepts of the legal process and the health care system. Law suits, malpractice, statutory and case law. Insurance and tax consideration. Continuing field experiences and seminars in community medicine.

#### 514. *Topics and Issues in Health Care Delivery*

Fall. 2 to 5 credits. Admission to a college of medicine or approval of department.

Medical economics, health care financing and organization, personnel utilization, resource allocation, health services administration, patterns of medical practice, politics of health care. Continuing field experiences and seminars in community medicine.

#### 518. *Aging: Clinical and Community Perspectives*

Spring. 4(3-3) Medical student or approval of instructor.

Multi-dimensional aspects of aging and their application to long-term, continuing care of the chronically ill older adult.

#### 519. *Health Education in Clinical Settings*

Spring. 3(2-3) Approval of instructor.

Application of concepts from social and behavioral sciences to clinical health education through laboratory and classroom experiences including development of a model educational plan for a specific health problem.

#### 520. *Biostatistical and Epidemiological Reasoning*

Fall. 4(4-0) Approval of instructor. Interdepartmental with the Department of Statistics and Probability.

Concepts and principles from biostatistics and epidemiology to facilitate critical reading literature relevant to clinical medicine and community health. Emphasis on design and interpretation.

#### 521. *Evaluation of Health Services*

Spring. 2 to 4 credits. Approval of instructor. Interdepartmental with the College of Nursing.

Use of experimental and quasi-experimental designs. Cost benefit and efficiency models. Assessment of health services delivery.

#### 522. *Principles of Gerontology for Medical Practice*

Spring. 3(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) Baccalaureate 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 biophysiological and psychodevelopmental 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.