

Sanitary Engineering S E

800. Environmental Engineering Seminar

Fall, Winter, Spring. 1(1-0) May reenroll for a maximum of 3 credits. Graduate major in C E or S E.

Current research, reports, and literature reviews.

802. Physical Chemical Processes of Environmental Engineering

Fall. 5(4-3) C E 481, C E 483 or concurrently.

Analysis of physical and chemical principles which form the basis of air and water pollution control and solid waste disposal; process dynamics, sedimentation, coagulation, filtration, adsorption, absorption, oxidation.

804. Biological Processes of Environmental Engineering

Winter. 4(4-0) MPH 200, S E 802.

Aerobic and anaerobic degradation of liquid and solid wastes. Biochemical reactions; activated sludge and trickling filter kinetics; sludge digestion and composting.

812. Water Treatment Plant Design

Winter. 4(3-3) C E 370, C E 483, C E 828, S E 802.

Theory and design of water treatment processes. Coagulation and flocculation; softening; sedimentation; filtration; disinfection.

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.

922. Air Pollution Control

Winter of odd-numbered years. 4(3-3) C E 321; S E 802, S E 822.

Application of physical and chemical principles to control of gaseous and particulate air pollutants. Cyclones, bag houses, electrostatic precipitators, adsorption, absorption, combustion.

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 I

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.

101. Human Communication II

Fall, Winter, Spring, Summer. 3(3-0) COM 100.

Continuation of COM 100, with greater emphasis on speaking and writing, and on analyzing increasingly complex communication situations.

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.

199. Methods of Inquiry

Fall, Winter, Spring, Summer. 3(3-0) Majors and minors only. COM 101.

Major theoretic orientations toward communication. Primary tools of scholarly inquiry.

205. Persuasion

Fall, Winter, Spring, Summer. 4(4-0) COM 101.

Process of influencing human behavior through persuasive communication. Experience in creating persuasive messages and in evaluating the acceptability of persuasive attempts.

210. Leadership

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

Principles and practice in the utilization of communication for effective leadership.

299. Individual Projects

Fall, Winter, Spring, Summer. Variable credit. 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 I

Fall, Winter, Spring, Summer. 4(3-0) Majors must enroll in COM 300R concurrently.

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.

300R. Effects of Communication II

Fall, Winter, Spring, Summer. 1 credit. Majors. COM 300 concurrently.

In-depth consideration of effects of communication.

315. Organizational Communication

Fall, Winter, Spring. 4(4-0) COM 101.

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 I

Fall, Winter, Spring, Summer. 4(4-0) COM 100; majors must enroll in COM 350R concurrently.

Theories of man's symbolic behaviors. Semiotics and general semantics.

350R. Signs and Sign-Behavior II

Fall, Winter, Spring, Summer. 1 credit. Majors. COM 350 concurrently.

In-depth consideration of signs and sign behavior.

351. Message Analysis

Winter. 4(4-0) COM 350.

Methods of describing messages and message codes, with emphasis on the concept of information.

352. Non-Verbal Communication

Fall. 4(4-0) COM 350.

Continuation of COM 351, with emphasis on non-verbal codes: gesture, expression, time and space, light.

360. Critical Perspectives on Communication

Fall, Winter, Spring. 4(3-0) COM 100.

Interdependence of communication and other societal factors, emphasizing criteria for ethical and social appropriateness.

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. 5(5-0) 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.

420. Message Design

Winter. 4(4-0) COM 101.

Principles and practice in message-media construction and selection.

499. Special Projects

Fall, Winter, Spring, Summer. Variable credit. 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.

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(3-0)

Current theories and research in interpersonal communication with emphasis on persuasion. The role of interpersonal communication in such processes as conflict resolution and information exchange will be considered.

828. Cross-Cultural Communication

Winter, Spring, 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 with implications for application.

850. Seminar in Research Utilization

Winter, Summer. 4(3-0) May reenroll for a maximum of 8 credits. Approval of department.

Applications of communication research to professional practice in such areas as teaching, change agencies, information system management, etc.

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, Spring. 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.

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. COM 806.

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. Variable credit. 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 (COLLEGE OF) **CAS**

492. Special Topics

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

Varied topics pertaining to the study of communication processes.

IDC. Aging and Communication

For course description, see Interdisciplinary Courses.

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**

(Name changed effective January 1, 1978. Formerly Department of Community Medicine.)

**College of Human Medicine
College of Osteopathic Medicine**

510. Health, Medical Care and Society

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

The role of social, cultural and psychological variables in health and illness and in health care delivery. Special attention to patient/physician behavior and health maintenance, health education and patient compliance.

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 I

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

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