

812. Water Treatment Plant Design
(805.) 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
(806.) 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
(803.) 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
(BIO 326.) 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
Spring. 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.

Descriptions - Communication

of Courses

805. **Communication Research** Fall. 5(4-2) 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** Winter. 4(5-0) COM 805.

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. 3(3-0)

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** Fall. 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.

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. 5(4-2) May reenroll for a maximum of 15 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.

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 programs in Communication and 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.

511. **Interpersonal Relationships in Health Care** Fall. 2 to 5 credits. Admission to a college of medicine or approval of department.

Developing the communication and interpersonal skills needed in health care delivery. Emphasis on the doctor-patient relationship. Use of video-taped interactions among students, and between students and simulated patients.

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** Spring. 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.

515. **Topics and Issues in Health Care Delivery II**

Fall. 2 to 5 credits. Admission to a college of medicine or approval of department. Continuation of CMS 514.

516. **Field Experience in Community Medicine I**

Winter. 1 to 5 credits. Admission to a college of medicine or approval of department. Continuation of CMS 515 field experiences and seminars.

517. **Field Experience in Community Medicine II**

Spring. 1 to 5 credits. Admission to a college of medicine or approval of department. Continuation of CMS 516 field experiences and seminars.

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

(H M 534.) 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.