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) Interdepartmental with and administered by the Department of Telecommunication.
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 manmagement, 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 (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.

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
Fall. 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 biophysiologic 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.

605. Occupational Health Clerkship

Fall, Winter, Spring, Summer. 6 to 12 credits. May reenroll for a maximum of 12 credits. Grade P in all courses offered in terms 1 through 8.

The occupational health program in an industrial setting. Exposure to delivery of medical care to workers, treatment of industrial accident injuries. Review of safety and preventive medicine programs.

610. Geriatric Clerkship

Fall, Winter, Spring, Summer. 2 to 12 credits. Successful completion of first two years of medical school.

Clinical and community experiences including history taking, patient assessment, development and use of management and care plan and use of community resources for the long term care of the aged.

619. Clinical Health Education Clerkship

Fall, Winter, Spring, Summer. 6 to 12 credits. May reenroll for a maximum of 12 credits. Grade P in all courses offered in terms 1 through 8.

Clinical experiences for developing and applying skills in patient and family health education. Identification of behavioral components of health care. Assessment of educational needs of patient and family.

620. Directed Studies in Community Medicine

Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 24 credits. Approval of department.

Individual projects on special problems related to community medicine.

630. Alcoholism Clerkship

Fall, Winter, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits. COM students: Satisfactory completion of terms 1 through 8. CHM students: Satisfactory completion of Phase II.

Diagnosis, inpatient and outpatient management of alcoholics.

COMPUTER SCIENCE CPS

College of Engineering

100. About Computers

Fall, Winter, Spring, Summer. 4(3-2) Not open to students with credit in CPS 130.

Computer impact on the individual and society. How computers work. Computer applications. Laboratory experience in accessing data bases, directing a screen simulated robot, use of a spreadsheet, and word processing.

112. Computing for Engineers and Scientists I

Fall, Winter, Spring, Summer. 3(2-2) MTH 112 or concurrently. Student may not receive credit in both CPS 112 and CPS 120.

Algorithms; data representation, structures, type; decision structures. Design and implementation of algorithms. Applications from engineering, mathematics, and science. Computer arithmetic; microcomputers, mainframes, editors, files.

113. Computing for Engineers and Scientists II

Fall, Winter, Spring, Summer. 3(2-2) CPS 112, MTH 112. Student may not receive credit in both CPS 113 and CPS 300.

Continuation of CPS 112 with emphasis upon more complex problem solving tasks. Development of self-sufficiency. Use of reference manuals and documentation. Networks, operating systems, software systems.

115. Introduction to Computing

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

Applications of computers in business, education, government and industry. Introduction to computing systems and programming in BASIC.

124. APL-Computer Programming for Scientists

Fall, Winter, Spring. 3(3-0) LBS 112 or concurrently. Interdepartmental with and administered by Lyman Briggs School.

APL programming; interactive programming techniques; arithmetic, logical, and extended APL operators; functions, applications to concurrent topics in mathematics; principles of operation of time-shared computers.

214. Computing for Engineers and Scientists III

Fall, Winter, Spring, Summer. 3(2-2) CPS 113; MTH 113.

Continuation of CPS 113. Data and instruction structures from both the high-level and implementation perspectives. Emphasis upon problem solving tasks requiring complex data and instructional structures.

251. Algorithms and Computing I

Fall, Winter, Spring. 3(2-3) MTH 112.

Algorithms, numeric and character data, data types, variables, expressions, decision structures, arrays, and procedures. Design and implementation of algorithms in PASCAL.

252. Algorithms and Computing II

Winter, Spring, Summer. 3(2-3) CPS 251, MTH 113.

Problem solving methods, numeric computation, string processing, number and character representation, data structures, and programming style. Design and implementation of algorithms in PASCAL.

292. Selected Topics

Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 8 credits when different topics are taken.

Topics selected will in general supplement and enrich existing courses, and lead to the development of new courses.

295. Independent Study

Fall, Winter, Spring, Summer. 1 credit. May reenroll for a maximum of 4 credits in CPS 295 and CPS 495 combined. Approval of department.

Independent undergraduate research in computer science.

300. Computer Programming

Fall, Winter, Spring, Summer. 3(3-0) CPS 120. Student may not receive credit in both CPS 113 and CPS 300.

Development and implementation of numeric and non-numeric algorithms using FORTRAN. Number systems and representations of data. Concepts of storage, processors and compilers.

301. FORTRAN Laboratory

Fall, Winter, Spring, Summer. 1(0-3) CPS 252 or concurrently. Students may not receive credit in CPS 301 and in CPS 120.

Programming laboratory using FORTRAN.

304. PASCAL Programming

Fall, Summer. 2(1-3) CPS 300, MTH 113. Students with credit in CPS 251 may not receive credit in CPS 304.

Programming style, problem solving methods, linear data structure, trees. Design and implementation of algorithms in PASCAL.

305. List Processing Languages

Winter. 3(3-0) CPS 300 or CPS 301.

Development and implementation of computer programs in string and list processing languages. Emphasis upon non-numeric applications. Structure of a simple list processing language. Comparison of list processing languages.

306. COBOL Programming

Spring. 3(3-0) CPS 115 or CPS 120 or CPS 251.

The mechanics of COBOL, a business data processing language; presented with illustrative problems.

311. Assembly Language and Machine Organization

Fall, Winter. 4(3-2) MTH 214 and one of the following pairs: CPS 252, CPS 301 or CPS 300, CPS 304, or CPS 113, CPS 304.

Machine structure, registers and operations. Programming in assembly language. Discrimination of assembler, loader and execution tasks. Comparison with interpretive processing. Introduction to program and data structures. Subprogram linkage.

312. Generative Coding and Information Structures

Winter, Spring. 4(3-2) CPS 311.

Macro facilities, conditional assembly, interaction with monitor, assembly language I/O. Use of buffer, stack, queue, deque, tree and list data structures. Interpreters, recursive routines.

313. Introduction to System Programming

Fall, Spring, Summer. 4(3-2) CPS 312.

Loaders and operating systems. Study of existing batch and time-sharing systems. Design and implementation of part of an operating system. Segments, overlays, multi-processing and multiprogramming.

321. Introduction to Discrete Structures

Fall, Winter. 3(3-0) CPS 252 or CPS 300, MTH 214.

Set operations, relations, functions and mappings. Boolean algebra, Boolean matrices, truth tables, minimization. Propositional and predicate calculus, well formed formulas, precedence relations, quantifiers. Applications to computer science.