

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

905. Communication Research Design
Fall, Winter, Spring. 4(4-0) May re-enroll for a maximum of 12 credits. 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 re-enroll 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. Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

COMMUNITY MEDICINE* C M

College of Osteopathic Medicine

510. Health Behavioral Science I
Fall. 2(1-3)
Relationship of the basic concepts of the social behavioral sciences that influence health and medical care. Consideration is given to the impact of social and cultural factors on health behavior.

511. Health Behavioral Science II
Winter. 2(1-3) 510 or approval of department.
Continuation of 510. Emphasis on communication and patient education. Designed to introduce the student physician to the art of communication and interviewing; physician-patient relationship; integration of patient education with medical care services.

512. Health Behavioral Science III
Spring. 2(1-3) 511 or approval of department.
Continuation of 511. The mental health issues of today in relation to the dynamics of change and resistance. Concepts of personality development, equilibrium, reaction to stress, reaction to authority, and dependency.

513. Health Behavioral Science IV
Summer. 2(1-3) 512 or approval of department.
The diagnosis and treatment of various forms of deviant behavior, i.e. alcoholism, neuroses, character disorders, sexual deviations, schizophrenia, affective psychoses, organic and psychosomatic conditions, and mental subnormality.

514. Health, Medical Care, and Society I
Fall. 2(1-3) 510, 511, 512, 513 or approval of department.
A historical review of medical care program in the United States. Introduction to health care organization and delivery. Consideration is given to health care facilities and financing of medical care.

515. Health, Medical Care, and Society III
Winter. 2(1-3) 514 or approval of department.

Continuation of 514. Emphasis is on manpower development and utilization; politics of health care; elements of community health planning; and related topics.

516. Health, Medical Care, and Society III
Spring. 2(1-3) 515 or approval of department.

Continuation of 515, with a clerkship in community medicine. Consideration is also given to patient care issues. Practical problems of health care delivery are analyzed which occur in clerkship. Some issues are explored directly with the principal parties involved.

517. Health, Medical Care, and Society IV
Summer. 2(1-3)
Continuation of 516 with a clerkship in community medicine.

620. Directed Studies in Community Medicine
Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll for a maximum of 24 credits. Approval of department.
Individual projects on special problems related to community medicine.

COMPUTER SCIENCE CPS

College of Engineering

110. Introduction to Computer Programming
Fall, Winter, Spring, Summer. 3(3-0)
Students may not receive credit in both 110 and 120.
FORTRAN programming, number systems and basic computer structure. Applications from various areas including business and social science.

120. Computer Programming for Engineers and Scientists
Fall, Winter, Spring, Summer. 3(3-0)
MTH 111 concurrently. Students may not receive credit in both 110 and 120.
FORTRAN programming, number systems and basic computer structure. Applications from engineering, mathematics and physical science.

255. Computer Models in Science and Engineering
Spring. 3(3-0) 110 or 120 or equivalent FORTRAN. Interdepartmental with and administered by the Mechanical Engineering Department.

Problem-solving; development of student's ability to formulate computable models based on finite physical elements, examples from statics, dynamics, electrical resistance, and conduction heat transfer.

300. Computer Programming
Fall, Winter, Spring, Summer. 3(2-1) 110 or 120; MTH 108 or 111.
Development and implementation of numeric and non-numeric algorithms using FORTRAN. Number systems and representations of data. Concepts of storage, processors and compilers.

305. List Processing Languages
Winter. 3(3-0) 300 or approval of department.
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) 110 or 120.
The mechanics of COBOL, a business data processing language; presented with illustrative problems.

311. Assembly Language and Machine Organization
(301.) Fall, Winter. 4(3-1) 300.
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
(302.) Winter, Spring. 4(3-1) 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
(303.) Fall, Spring, Summer. 4(3-1) 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 multi-programming.

321. Introduction to Discrete Structures
Fall, Winter. 3(3-0) 300, MTH 113.
Set operations, relations and functions. Deductive and mathematical proofs. Algebraic systems. Applications to computer science.

322. Introduction to Theory of Computing
Winter, Spring. 3(3-0) 321.
Finite-state machines, Turing machines. Effective procedures and algorithms. Symbol manipulation systems.

411. Information Theory
Winter. 3(3-0) 110 or 120; 322 recommended; STT 351 or 441.
Measures of information content and flow. Channel capacity and theoretical limits on information transmission. Applications to coding and computer related studies.

421. Combinational Circuits
Fall. 3(3-0) 300, 321; 322 desirable; MTH 215.
Combinational circuits. Minimization, multiple output, NAND-NOR implementation and iterative circuits.

422. Sequential Circuits
Winter. 3(3-0) 311, 421.
Synchronous and asynchronous machines. State minimization, flip-flops, Boolean equations, races and hazards.

423. Computer Architecture
Spring. 3(3-0) 422.
Computer arithmetic algorithms, memory systems, computer design, input-output system design, digital system simulation.

451. Mechanical Language I
Fall. 3(3-0) 311; MTH 215; 321 or PHL 337 and MTH 324; 322 recommended.
Classification of grammars and their properties. BNF, trees, relations, top-down parsing. Simple precedence grammars using matrix techniques.

*Established July 1, 1972.