COMMUNICATION ARTS AND SCIENCES

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 be repeated for a maximum of 15 credits. Approval of project proposal by department. Independent research, group research, student-directed group projects.

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.

515. 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)
Theoretical 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 be repeated for a maximum of 6 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. Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

905. Communication Research Design
Fall, Winter, Spring. 5(4-2) May be repeated 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. Variable credit. May be repeated for a maximum of 45 credits. Approval of department.
Theoretical and research issues in communication.

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

COMMUNITY HEALTH SCIENCE – Descriptions of Courses

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.

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292. Selected Topics
Fall, Winter, Spring, Summer. 1 to 3 credits. May enroll for a maximum of 6 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
(290) Fall, Winter, Spring, Summer. 1 credit. May enroll 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 110, or CPS 120, MTH 108 or MTH 111.
- Development and implementation of numeric and non-numerical algorithms using FORTRAN.
- Number systems and representations of data.
- Concepts of storage, processors and compilers.

305. List Processing Languages
Winter. 3(3-0) CPS 300 or approval of department.
- Development and implementation of computer programs in string and list processing languages.
- Emphasis upon non-numerical applications.
- Structure of a simple list processing language.
- Comparison of list processing languages.

311. Assembly Language and Machine Organization
Fall, Winter. 4(3-1) CPS 300, MTH 110 or concurrently, or approval of department.
- Machine structure, registers and operations.
- Programming in assembly language.
- Discrimination of assembler, loader and execution tasks.
- Comparison with interactive processing.
- Introduction to program and data structures. Subprogram linkage.

312. Generative Coding and Information Structures
Winter, Spring. 3(3-0) CPS 311, MTH 214 or concurrently or approval of department.
- Macro facilities, conditional assembly, interaction with monitor, assembly language I/0.
- Use of buffer, stack, queue, deque, tree and list data structures.
- Interpreters, recursive routines.

313. Introduction to System Programming
Fall, Spring, Summer. 4(3-1) 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 multi-programming.

314. Computer Programming for Scientists
Fall, Winter, Spring. 3(3-0) LBC 112 or concurrently. Interdepartmental with and administered by Lyman Briggs College.
- APL programming: interactive programming techniques; arithmetic, logical, and extended ALP operators; functions, applications to concurrent topics in mathematics; principles of operators of time-shared computers.

321. Introduction to Discrete Structures
Fall, Winter. 3(3-0) CPS 300, MTH 113.
- Set operations, relations, functions and mappings.
- Boolean algebra, Boolean matrices, truth tables, minimization. Propositional and predicate calculus, well formed formulae, precedence relations, quantifiers. Applications to computer science.

322. Introduction to Theory of Computation
Fall, Winter. 3(3-0) CPS 321, MTH 215, or MTH 334.
- Finite-state machines, stack automata, Turing machines.
- Effective procedures and computability. Introduction to recursive functions, symbol manipulation systems.

323. Generative Coding and Information Structures
Fall, Winter. 3(3-0) CPS 311, MTH 214 or concurrently, or approval of department.
- Macro facilities, conditional assembly, interaction with monitor, assembly language I/0.
- Use of buffer, stack, queue, deque, tree and list data structures.
- Interpreters, recursive routines.

341. Computer Aided Manufacturing
Spring, 3(3-2) CPS 110 or CPS 120. Interdepartmental with and administered by the Department of Mechanical Engineering.
- Use of the APT language to control NC machines.

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

414. Interactive Computer Graphics
Summer. 3(3-0) CPS 312, matrix algebra.
- Design of interactive graphics systems including display devices, processors, data structures, interrupt processing and graphical techniques.
- Two and three dimensional transformations, perspectives, hidden surface removal, shading.
- Graphics languages.

421. Combinational Circuits
Fall. 3(3-0) CPS 311 and CPS 321 or approval of department.
- Combinational circuits. Minimization, multiple output, NAND-NOR implementation and iterative circuits.

422. Sequential Circuits
Winter. 3(3-0) CPS 322 or approval of department, CPS 421.
- Synchronous and asynchronous machines.
- Boolean equations, state minimization, races and hazards.
- Regular expressions, Moore and Mealy models.

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

447. Digital Filtering
Spring. 3(3-0) CPS 300, MTH 310.
- Background: Sampling theorem, discrete linear systems.

451. Design of Language Processors I
Fall. 3(3-0) CPS 313 or concurrently, CPS 322.
- Relation between languages and automata.
- Properties of grammars. Lexical analysis and symbol-table management. Syntactic analysis using top-down parsing, precedence, L(1) and L(1)(k). Preliminary design of a compiler.

452. Design of Language Processors II
Winter. 3(3-0) CPS 451.

453. Design of Language Processors III
Spring. 3(3-0) CPS 452.
- Continuation of CPS 452. Readings from the current literature. Completion of compiler project.