

TO: The Indiana University-Purdue University at Fort Wayne Faculty Senate

FROM: The Joint Educational Policy Committee

DATE: April 15, 1981

SUBJECT: Computer Science and Technology Task Force Report

DISPOSITION: For Information

The Joint Educational Policy Committee unanimously endorses the report of the Computer Science and Technology Task Force Report with the following change of the penultimate sentence in I. E. (see attached):

"Faculty members shall not experience a reduction in current rank, tenure, or salary status as a result of the creation of the CSIS Department."

INDIANA UNIVERSITY - PURDUE UNIVERSITY

AT FORT WAYNE

2101 COLISEUM BOULEVARD EAST

FORT WAYNE, INDIANA 46805

MEMORANDUM

TO: Edward A. Nicholson

FROM: Computer Science and Technology Task Force

DATE: February 2, 1981

RE: REPORT AND PROPOSAL

Pursuant to and consistent with your general charge to the Task Force to:

1. Assess the needs of students, faculty, and the community-at-large for computer education services;
2. Develop a concise mission statement based on these needs;
3. Recommend to the Office of the Vice Chancellor and Dean of the Faculty a single academic department which will achieve that mission;
4. As a precursor to a single department, formulate curriculum recommendations which meet the objectives set forth in the mission statement; and recommendations will be acted upon by the single department upon its formation;

the following is recommended to you for appropriate action. The Task Force believes that the recommendation detailed below represents the best effort of the Task Force in providing a computer education program for IPFW students which will be state-of-the-art, cost effective, guarantee curriculum integrity and academic diversity, and ensure a high-quality and stable faculty. Further, we trust that action through the Trustee level, hopefully at the March, 1981 meeting, can be achieved in sufficient time to implement the new department for Fall Term, 1981.

In achieving the above, the Task Force considered all extant drafts of agreements and proposals generated by other IPFW constituencies. All recommendations are being sent through appropriate department, school, and Senate mechanisms concurrent with the submission of these recommendations to you. Wherein department, school, and Senate concerns differ from those of the Task Force, they are to be sent to you as appendices to this report for your consideration. The Task Force does not wish to alter its report in light of whatever concerns may arise.

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I. The Department

- A. The name of the Department shall be The Department of Computer Science and Information Systems (CSIS).
- B. The course designator for undergraduate offerings of the Department shall be CSIS.
- C. The needs of faculty for in-house service training, non-credit seminars in machine orientation and resource familiarization, and demonstration and computer user support services are to be included within the area of the Computing and Data Processing Service Department, and are not the responsibility of the CSIS Department.
- D. The administration shall take the necessary steps to facilitate offering adjunct appointments, joint appointments, and full appointments to the CSIS Department.
- E. For the initial composition of the CSIS Department, all faculty wishing to become members of the Department will submit vitas to a review body comprised of the Fort Wayne Assistant Vice Chancellor and Purdue Deans who shall recommend faculty appointments to the Department. The review body shall consider the credentials of individuals as well as the existing University commitments to these individuals. No faculty member shall experience a reduction in current rank, tenure, or salary status as a result of the creation of the CSIS Department for one full academic year. The chairmen of the departments from which credentials are submitted must be consulted.

II. The Mission

A. General Mission

The Department of Computer Science and Information Systems perceives its mission to be one of providing a high-quality program which meets the diverse educational needs of the citizens of Northeastern Indiana. The citizens served include majors and non-majors, degree and non-degree students, and members of the community as well as students on campus. These citizens are served via degree programs from associate through graduate levels (and through Continuing Education) designed to meet varied educational needs ranging from personal enrichment to professional advancement.

B. Specific Objectives

Based on its general mission, the Department has developed specific objectives to meet the tenets of that mission. Presently, the specific objectives of the Department of Computer Science and Information Systems are to provide:

1. Courses dealing primarily with computer programming and related topics;
2. Computer science and information systems concentrations for other disciplines;
3. Two types of baccalaureate degree: one professionally-oriented and the other liberal arts-oriented.
4. A professionally-oriented associate degree;
5. Courses which fulfill obligations to students currently enrolled in existing degree programs; and
6. Any graduate courses and degree programs in computer science and/or information systems.

III. The Curricula

A. The CSIS Department shall implement curricula by means of the following groups of courses:

1. Core CSIS courses

A core of courses (expected to occupy approximately 24-30 hours) required of all Bachelor's degree CSIS majors covering the fundamentals of computer science and information systems necessary for all or most upper-division courses in the field. Core courses for Associate degree majors will consist of a subset of this core.

The primary objectives of the core courses are to teach fundamental topics of computer science and information systems which are transferrable among and applicable to the broadest possible classes of software systems, computer-solvable problems and computer applications, and to develop a high level of skill in problem analysis, algorithmic development and software methodology.

An important but secondary objective is to expose the student to a diversity of representative applications drawn from a wide range of disciplines and problem settings and, once programming expertise is firmly established, to commonly used programming languages.

Other objectives of the core courses:

- Allow the student to delay specialization until sufficient grasp of the field as a whole is gained to make intelligent choices possible.
- Provide, with selectivity, the basis for CSIS concentrations by majors in other disciplines. (Concentrations may require more specialized non-major courses also.)
- Meet the needs of other departments' concentrations in CSIS consistent with the academic integrity of major programs.
- Provide for advanced placement and/or accelerated progress for students with computer expertise gained from other sources.

Example core courses: Fundamentals of CSIS (this sequence or equivalent prerequisite to everything else); Assembly-level programming including macro assemblers; Computer Organization and Introduction to Operating Systems; Programming Language Organization; Software Methodology; Data and File Structures. They should also include in approximately the fourth or fifth semester a project course which allows some degree of specialization in language and application interests, e.g., a scientific or mathematical project in FORTRAN, a business project in COBOL, a systems software project in PASCAL or Assembler, etc. This course is most effective if done in conjunction with a generalized software methods course.

2. Upper-Division

These courses or course sequences cover the fundamental areas of computer science and information systems at the advanced undergraduate and dual levels. They should not depend on topics outside the core courses for prerequisites except possibly non-major courses such as mathematics. They should overlap very little in content, should cover generally applicable rather than specialized topics, and should be offered regularly.

Examples (not exhaustive): Analysis and Design of Information Systems; Data Base Systems; Numerical Analysis/Methods; Computer Architecture and Operating Systems; Programming Language Structure and Design; Introduction to Theoretical Computer Science; Distributed Processing, Networks, and Data Communications; Formal Computational Structures; Legal and Social Issues.

3. Specializations

These courses consist of some lower-division but mostly upper-division and dual-level courses allowing specialization in areas of CSIS (primarily for the professional degree). They may depend on each other and on category 2 upper-division courses, as well as the core, and should be offered as demand and Department expertise indicates.

Examples (not exhaustive): Management Information Systems; Systems Analysis and Design; Operating Systems Design and Implementation; Compiler Construction; Software Engineering, Numerical Analysis/Methods II; Data-Base Implementation; Simulation, Modeling, Performance Evaluation.

- B. The Computer Science and Information Systems Department is charged with giving all due consideration to curricula recommendations of professional computing organizations in developing major degree programs consistent with needs, academic objectives, and resources of the Fort Wayne campus. Attention is particularly directed to the ACM Curricula Committees' recommendations, the IEEE Curricula Committee's recommendations, and recommendations of the DPMA and ASM in Information Systems. The Department is further charged with maintaining inter-campus transferability as provided in the Trustee's Autonomy Resolution cited in the Administrative Memorandum #243, dated March 22, 1973.
- C. In recognition of the legitimate interests of several departments in the curricula of the CSIS Department, the curricula of the department must be approved for the first two years of its existence by the Schools of Engineering, Technology and Nursing and Science and Humanities. To further ensure a spirit of cooperation, any curricula changes in the subsequent two years must come via input from both **schools.**