



STATE OF CONNECTICUT

BOARD OF TRUSTEES
FOR THE STATE COLLEGES

P. O. Box 2008 NEW BRITAIN, CONNECTICUT 06050
TEL. NEW BRITAIN: 203-229-1607 TEL. HARTFORD: 203-566-7373

RESOLUTION

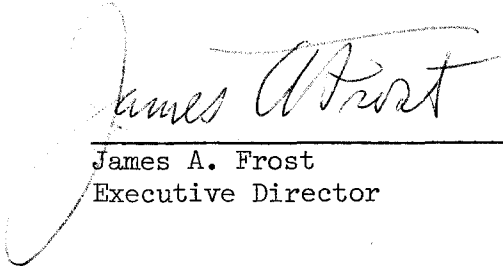
concerning

BACHELOR OF SCIENCE DEGREE
in
COMPUTER AND INFORMATIONAL SCIENCES

September 9, 1977

RESOLVED, Under the authority granted the Board of Trustees in Public Act 77-573, Section 16, of the General Statutes, Southern Connecticut State College is hereby authorized to submit a program proposal leading to a Bachelor of Science Degree in Computer and Informational Sciences to the Board of Higher Education for planning approval.

A Certified True Copy:



James A. Frost
Executive Director

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STATE OF CONNECTICUT

BOARD OF HIGHER EDUCATION

P.O. Box 1320 — HARTFORD, CONNECTICUT 06101

AREA CODE 203 566-2325

July 2, 1980

RECEIVED

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BOARD OF TRUSTEES
FOR THE STATE COLLEGES

Dr. Thomas A. Porter
Executive Officer for Academic Affairs
State Colleges
P.O. Box 2008
New Britain, CT 06050

Dear Dr. Porter:

At a meeting on June 24, 1980, the Board of Higher Education approved the following resolution:

RESOLVED that the Board of Higher Education, in accordance with the provisions of Section 10-330 of the General Statutes, hereby license Southern Connecticut State College to operate a bachelor's degree level program in Computer Science until January 1, 1982, with a progress report by March 1, 1981 and an interim visit in April, 1981, possibly in cooperation with the New England Association of Schools and Colleges and provided that the equipment and facilities of the Computer Center will be reviewed during the interim visit.

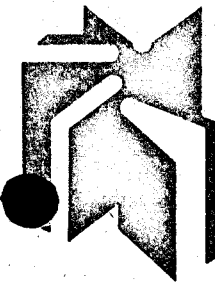
This favorable action taken by the Board is contingent on the appropriate commitment of resources and is subject to the usual ongoing accrediting review by the Board of Higher Education. You are reminded that section 10-330-2(g) requires that an application for renewal of licensure and accreditation must be filed at least one year prior to the termination date of this authorization.

Sincerely,

Donald H. Winandy
Donald H. Winandy, Director
Planning and Academic Affairs

DHW:df

cc Manson Van B. Jennings, SCSC
Donald W. Skinner, BHE



**THE
CONNECTICUT
STATE
COLLEGES**

FOUNDED 1849

Executive Officer for
Academic and Student Affairs

P.O. BOX 2008 NEW BRITAIN, CONNECTICUT 06050

Telephone : (203) 827-7700

May 4, 1979

Dr. Donald H. Winandy, Coordinator
Office of Planning & Academic Affairs
Board of Higher Education
P. O. Box 1320
Hartford, CT 06101

Dear Don:

According to our records, the Standing Committee on Accreditation on June 5, 1978, approved three consultants to review the proposed B.S. in Computer Science at Southern.

Changes in personnel at Southern in the Computer Science Department have caused delays in action on this matter.

We would like now to move ahead to bring the consultants in for a visit to the campus to review the program. Before doing so, however, I would like to clear with you as to whether you would regard this as an appropriate and timely step.

Please advise us on the matter.

Sincerely,

Thomas A. Porter
Executive Officer for Academic
and Student Affairs

TAP:jf
cc: Dr. Frost ✓



STATE OF CONNECTICUT

BOARD OF HIGHER EDUCATION

P.O. Box 1320

HARTFORD, CONNECTICUT 06101

AREA CODE 203 566-3911

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BOARD OF TRUSTEES
FOR THE STATE COLLEGES

Master Report

December 8, 1977

Dr. James Frost
Executive Secretary
Board of Trustees for
State Colleges
P.O. Box 2008
New Britain, CT 06050

Dear Dr. Frost:

This is to confirm that the Board of Higher Education at its December 6 meeting, based upon the recommendation of the Advisory Committee on Coordination of Planning voted planning approval for program development of the following:

B.S. in Computer Science (Hegis Number 0701) at
Southern Connecticut State College

This favorable coordinating action taken by the Board is contingent on the availability of appropriate resources and carries the understanding that the program is subject to the usual licensing and accrediting by the Board of Higher Education prior to the offering of this program. Application for licensure should be made to the Board within six months.

We wish you much success in your planning effort and BHE looks forward to receiving your application for licensure.

Sincerely,

Diane K. Youn
Associate in Higher Education
Academic Planning

DKY:sar

- cc: Dr. H. Jestin
- President M. Jennings
- Dr. E. Middlebrooks
- Dr. L. Kuslan
- Dr. D. Duman
- Dr. D. Winandy

APPLICATION FOR PLANNING APPROVAL
COMPUTER SCIENCE UNDERGRADUATE MAJOR

AT
SOUTHERN CONNECTICUT STATE COLLEGE

I. PROGRAM CLASSIFICATION

- A. Program Name: Computer Science
- B. Title of degree: Bachelor of Science (B.S.)
- C. HEGIS classification code number and title: 0701 - Computer and Information Sciences, General
- D. Department, school or college: Computer Science in the School of Liberal Arts.
- E. Institution: Southern Connecticut State College

II. PROGRAM DESCRIPTION

- A. The Computer Science major at Southern Connecticut State College would prepare students to pursue a career or advanced study in one or more areas of Computer Science. In order to attain this objective Computer Science majors will be given a thorough grounding in the study of algorithms in programming languages which operate on data structures in the environment of hardware. Emphasis in the first two years of the program will be placed on establishing knowledge in a broad core of Computer Science courses, preparing the student to choose a specific concentration. The topics presented in the first two years fall in the basic categories of 1) programming, 2) software organization, 3) hardware organization, and 4) data structures and file processing.

Upon completion of the basic requirements the student will follow an upper level concentration in Hardware/Software, Information

Processing or Scientific Computing. Graduates will be prepared to pursue further education in Computer Science or for employment related to one of these concentrations:

Hardware/Software Concentration:

This concentration will present a unified, but detailed, view of digital hardware and software as interacting components of computing systems, defining and constraining the environment of applications. Emphasis will be on the acquisition of vocationally marketable technical knowledge and skills. To this end, new, promising, "hot" areas will be stressed, while routine areas will be de-emphasized.

Upon completion, the student will be prepared for entry-level positions in software design, digital design, systems programming, communications interfacing, microprogramming, and other related specialties.

Information Processing Concentration:

The student who completes this concentration will be able to analyze, design and implement systems and program specifications and record layouts for complex systems such as Data Based Management and other file handling systems. He will be given a working knowledge of more than one high-level language and a background in an assembler language. The student will be given experience with software systems running on both large computer systems and a mini-computer. The student will also achieve familiarity with typical commercial systems such as financial systems, production control systems and data management systems. Specific objectives of this concentration are:

To provide a working view of hardware/software configurations as integrated systems;

To introduce the basic functions of file and communication systems, in terms of trade-offs among cost, capacity and responsiveness;

To examine some systems integrating file and communications functions such as the organizational data base system or the computer utility; and

To develop communication skills, including technical writing and speech.

Specific topics to be covered in the course work will be hardware modules, execution software, multi-programming and multi-processing, operation software, data and program handling software, functions of file and communication systems, review of data management systems, and review of communication systems.

Scientific Computing Concentration:

This concentration will require in the area of mathematics a knowledge of analysis through differential equations and applied algebra. Course work will be required in computer-oriented mathematics and numerical techniques; for example, solution of systems of equations, interpolation and approximation, numerical and differential quadrature, numerical solutions of boundary value problems in ordinary differential equations and elimination methods. The student will be given a familiarity with mathematical modeling, simulation and optimization techniques, including some knowledge of hybrid computing, artificial intelligence, and computer graphics. Numerical algorithms will be devised and evaluated for accuracy, efficiency and suitability for high-speed digital computing.

B. Involvement of other institutions through regional consortia, etc.: The students enrolled in this program will be given access to the computing hardware and software systems available at the University of Connecticut Research Computing Center. This access is currently available through a direct link between our own on-site computer and the computers in the Research Computing Center at the University of Connecticut.

C. Transfer articulation considerations: This Computer Science major will be constructed so as to be compatible with the graduate program in Computer Science currently available to the University of Connecticut. It will also be designed to be compatible with acceptance of transfer students from the Connecticut Community College system and the State Technical Schools.

III. PROGRAM JUSTIFICATION

A. Relationship to mission and existing or projected programs: It has become increasingly typical to offer the undergraduate Computer Science degree in the School of Liberal Arts. Our plan is to offer the Computer Science major as a liberal arts program. This field of study is closely related to the current cultural and economic growth of the State of Connecticut. It compliments the current offerings and areas of growth in our school especially in the departments of Economics and Mathematics.

According to the Connecticut Occupational Outlook, 1970-80, prepared by the Connecticut Labor Department in October 1974, the current and future demand for computer specialists (principally programmers and systems analysts) far exceeds the current production. Specific labor market information can be found in Section C below. The current

production of bachelor degrees in the State of Connecticut in the area of Computer and Information Science is less than 60 per year.

Between July 1, 1974 and June 30, 1975 forty-eight Computer and Information Science degrees were conferred in the State of Connecticut:

Quinnipiac College	22
U.S. Coast Guard	4
University of Connecticut - Main Campus	17
Yale University	<u>5</u>
	48

Between July 1, 1973 and June 30, 1974 fifty-five Computer and Information Science degrees were conferred in the State of Connecticut:

Quinnipiac College	29
University of Connecticut - Main Campus	19
U.S. Coast Guard	2
Yale University	<u>5</u>
	55

These data were supplied by the Connecticut Commission of Higher Education's Department of Research in reports entitled "Degrees Conferred."

The Connecticut Occupational Outlook, 1970-80 projects a need for 2,240 such computer specialists in the decade covered by the report and also states that this is one of the professions "which will require the most sizable number of workers" in this decade.

B. Student demand and citizen interest: Southern Connecticut State College currently offers an undergraduate Computer Science minor program along with several service courses. For the last three years, course enrollments have been artificially limited because existing staff could not accommodate all students desiring the entry level Computer Science courses.

At present, the number of Computer Science minors at Southern Connecticut State College is about 30 per semester. In view of the present state-wide production deficit, the great demand for Computer Science courses noted above, the current growth rate being experienced by our Computer Science minor (20%) and the projected elevation of our Computer Science program to an undergraduate major, we feel that a 15% growth rate per year is a justifiable projection. This projection implies the following enrollment in the program:

Computer Science minor base	30	students
First year	35	"
Second year	39	"
Third year	45	"

C. Local, state, and national labor market data: Labor market for Computer Science specialists (principally programmers and systems analysts):

Immediate New Haven Area (New Haven Area Occupational Outlook, 1970-80, prepared by Connecticut Labor Department)

<u>1970</u>	<u>1980</u>	<u>%</u>	<u>Change</u>
560	680	21.4	Net 120
<u>Deaths & Retirements</u>		<u>Total Manpower Needs</u>	
110		230*	

*This figure does not include the recent SNET Co. development which has significantly increased the manpower requirements in the New Haven area.

State of Connecticut (Occupational Outlook, 1970-80, prepared by
Connecticut Labor Department)

<u>1970</u>	<u>1980</u>	<u>%</u>	<u>Net</u>
5590	6950	16.0	960
<u>Deaths & Retirements</u>		<u>Total Manpower Needs</u>	
1280		2240	

National (U.S. Economy in 1985. Bulletin No. 1809, U.S. Department of
Labor, 1974)

<u>1970</u>	<u>1980</u>	<u>%</u>	<u>Net</u>
289,000	475,000	64.0	186,000

IV. RESOURCE REQUIREMENTS

A. Constituent Unit Board assurance that the necessary support (e.g., resources, funds, library holdings, etc.) will be available: Current resources available in support of the Computer Science major are: Univac Series 70/45 (128K computer), approximately 1,000 volumes relating to Computer Science in the main campus library, key punches and card sorter in Computer Science workroom, 200 volumes and reference manuals in the Computer Science Department library, and periodicals in the main campus library.

Currently on order is a remote reader/printer which will provide access to the Research Computing Center at the University of Connecticut, giving the student access to a large library developed to support a Computer Science program.

Currently on hold, seeking release of funds, is an Interactive

Learning System which will provide interactive experiences for those involved in academic programs.

Additional resource requirements to support this program would be an increase in both periodicals and volumes relating to Computer Science in the main library, the release of the funds for the acquisition of the Interactive Learning System, the acquisition of laboratory space to provide the necessary hardware and software experiences relating to mini-processor applications, for batch operations and for interactive equipment.

B. Need and availability of external resources (e.g., clinical facilities): Required external resources include the current batch processing link with the University of Connecticut. Students in the existing Computer Science minor program have been placed in cooperative programs and internships at Aetna Life & Casualty, the New Haven Savings Bank, and the SCSC Computer Center. It is anticipated that such programs will be encouraged and expanded with the implementation of the Computer Science major program.

C. Current faculty available for programs and estimate of additional faculty needed: The current Computer Science faculty supporting the Computer Science minor includes two full-time professors, one director devoting part time to management of this program, and the department has most recently expanded to five part-time instructors.

It is estimated that the course offerings for the major program will require one full-time faculty member to be added per year for the first four years. This estimate is based on projected student enrollments and additional faculty expertise required to implement the program. It is

anticipated that the planned concentrations will be introduced gradually as student demand and faculty with appropriate skills become available.

V. TIME SCHEDULE

- A. Dates of approval at institution: May 15, 1977 - by Constituent Unit Board: September 1977.
- B. Proposed date of enrollment of students: September 1978.
- C. Target date for awarding first degree: June 1980.*

*It is possible that students will have completed all requirements for the Computer Science major by 1980, since students currently enrolled in the Computer Science minor program will have completed the requirements for the first two years of the major program.

VI. LICENSURE AND ACCREDITATION

Licensure: State date of conference with personnel in the Commission accreditation office: November 15, 1977.