APPENDIX V
TWO-YEAR COLLEGE SURVEY

Conference Board of the Mathematical Sciences

SURVEY OF PROGRAMS
in
MATHEMATICS AND COMPUTER SCIENCE
in
TWO-YEAR COLLEGES
1990

GENERAL INSTRUCTIONS

This questionnaire should be completed by the person who is directly in charge of the mathematics program at your institution.

You are asked to report on **ALL** the courses and faculty in your institution which fall under the general heading of the mathematical or computer sciences. For some colleges this may involve courses and faculty in statistics, applied mathematics and computer science that are mathematical in nature, but are taught outside the mathematics department. If your institution does not have a departmental or divisional structure, consider the group of all mathematics and computer science professors to be the "mathematics department" for the purpose of this questionnaire.

Question 3 below refers to courses taught in the "mathematics department" as explained above. Question 4 refers to mathematics and/or computer science courses taught outside the "mathematics department".

Please include data on part-time and evening students and faculty as well as data on occupational and terminal programs. Include non-credit and remedial courses. Do NOT, however, include data concerning campuses jurisdictionally separate from yours, if such exist.

If you have any questions, please call Monica Foulkes at 1-800-321-4267.

Please return your completed questionnaire by November 1, 1990, to:

CBMS Survey
Attn: Monica Foulkes
American Mathematical Society
PO Box 6248
Providence, RI 02940-6248

Please do not write in this space

1. A. Name of your institution: _____

If this two-year institution is part of a larger organization, identify this relationship: _____

B. Your academic calendar is:

[ ] Semester [ ] Trimester [ ] Quarter [ ] 4-1-4 [ ] Other (specify)

2. How is the mathematics program administered at your institution?

[ ] Mathematics department

[ ] Mathematics and Computer Science department

[ ] Mathematics and Science department or division

[ ] No department structure

[ ] Other (specify):

_____

3. Courses in the Mathematical and Computer Sciences offered by your mathematics department in the Fall 1990.

Instructions for question 3:

A.   The courses in column (1) in the following table are listed with typical course titles (which may not necessarily coincide with the titles you use). Additional spaces (36 and 37) are provided to permit you to write in names of courses which do not fit reasonably under some listed title. Please use your best judgment as to how courses should be listed.

   For the purpose of this survey, consider as a single course instruction in a particular area of mathematics which you offer as a sequence of two or more parts (e.g., calculus).

B.   For each course in column (1) that is offered during fall 1990, write in column (2) the total number of students who enrolled in the course in the fall term of 1990. If a course is not being taught in the fall of 1990, enter "0" (zero) in column (2).

C.   In column (3) give the total number of sections of the course in fall 1990.

D.   In column (4) give the total number of sections of this course taught by faculty teaching part-time in your department.

E.   In column (5) give the total number of sections of this course for which a hand calculator is recommended.

F.   In column (6) give the total number of sections of this course in which computer homework assignments are regularly given.

G. Courses 17 through 37 contain an additional column concerning availability of the course.

   NOTE: There should be entries in each of columns (2) through (6), as well as column (7) for courses 17 through 37.

Name of Course (or equivalent) (1)	Total Number of Students Enrolled Fall 1990 (2)	Total Number of Sections (3)	Number of sections taught by part-time faculty (4)	No. of sections in which hand calculators are recommended (5)	No. of sect. in which computer assignments are regularly given (6)	Please do not write in this space
1. Arithmetic						
2. General Mathematics (basic skills, operations)						
3. Pre-algebra						
4. Elementary Algebra (high school)						
5. Intermediate Algebra (high school)						
6. High School Geometry						
7. College Algebra						
8. Trigonometry						
9. College Algebra and Trigonometry, combined						
10. Precalculus/Elementary Functions						No. of Sections which assign group projects (7) / No. of Sections which include writing compo-nents (8)
11. Analytic Geometry						
12. Mainstream* Calculus I (math, physics, sci & engineering)						
13. Mainstream* Calculus II (math, physics, sci & engineering)						
14. Mainstream* Calculus III (math, physics, sci & engineering)						
15. Non Mainstream Calculus I (biological, sociological & management sciences)						
16. Non Mainstream Calculus II (biological, sociological & management sciences)						

* A calculus course is mainstream if it leads to the usual upper division mathematical science courses.

3. Courses in the Mathematical and Computer Sciences offered by your mathematics department in the Fall 1990 (Contd.)

Name of Course (or equivalent) (1)	Total Number of Students Enrolled (2)	Total Number of Sections (3)	Number of sections taught by part-time faculty (4)	No. of sections in which hand calculators are recommended (5)	No. of sect. in which computer assignments are regularly given (6)	If not offered in fall 1990, was it offered in 1989-90 or is it scheduled for spring 1991? Yes (7) No
17. Differential Equations						☐ ☐
18. Linear Algebra						☐ n
19. Discrete Mathematics						n n
20. Finite Mathematics						n n
21. Mathematics for Liberal Arts						n n
22. Business Mathematics (including Introduction to Calculus)						n n
23. Mathematics for Elementary School Teachers						n n
24. Elementary Statistics						n n
25. Probability (and Statistics)						n n
26. Technical Mathematics						n n
27. Technical Mathematics (Calculus level)						n n
28. Use of Hand Calculators						n n
29. Computers and Society						n n
30. Data Processing, Elementary or Advanced						n n
31. Elementary Programming (BASIC, Fortran, Pascal, Cobol)						n n
32. Advanced Programming						n n
33. Database Management						n n
34. Assembly Language Programming						n n
35. Data Structures						n n
36. Other Computer Science Courses						n n
. . . .						n n
37. Other Mathematics Courses						n n
. . . .						n n

4. Outside Enrollments - Fall 1990.

This question identifies courses in mathematics or computer science taught in divisions or departments of your institution, including units concerned primarily with remedial mathematics, **OTHER THAN** that division or department having primary responsibility for mathematics.

Enter in the relevant boxes an estimate of the total course enrollments for **fall 1990.** Please consult schedules to give good estimates of numbers of enrollments. Please enter "0" (zero) in each box for which there are no courses given.

Please do not write in this space

Course	Enrollment in courses given by division specializing in:				
	Natural Sciences	Occupational Programs	Business	Social Sciences	Other
1. Arithmetic					
2. Elementary Algebra (high school)					
3. Intermediate Algebra (high school)					
4. College Algebra					
5. Trigonometry or Precalculus College Math.					
6. Calculus or Differential Equations					
7. Business Mathematics					
8. Statistics/Probability					
9. Computer Science & Programming					
10. Data Processing					
11. Technical Mathematics					
12. Other					

5. Mathematics Faculty.

A. FULL-TIME FACULTY:

Indicate in the table below the numbers of your full-time mathematical and computer sciences faculty members teaching courses reported in question 3 above, according to their highest degrees and subject fields in which these were earned:

Highest Degree / Subject Field	In Mathematics	In Statistics	In Computer Science	In Mathematics Education	In another field
Ph.D.					
Ed.D.					
Dr. Arts					
Master's degree, plus 1 year					
Master's degree					
Master's degree (special program) e.g., MAT, MST					
Bachelor's degree					

TOTAL NUMBER OF FULL-TIME FACULTY: _____

5. Mathematics Faculty (Contd.)

B. What is the expected (or typical) weekly teaching load in classroom
contact hours for members of your full-time faculty?   _____

C. How many of your full-time faculty teach extra hours for extra pay?   _____

D. What is the average overload (in contact hours) for those faculty?   _____

E. PART-TIME FACULTY:

In the table below, indicate the numbers of your faculty who teach part-time in your department by highest
degrees and subject fields.

Highest Degree / Subject Field	In Mathematics	In Statistics	In Computer Science	In Mathematics Education	In another field
Ph.D.					
Ed.D.					
Dr. Arts					
Master's degree, plus 1 year					
Master's degree					
Master's degree (special program) e.g., MAT, MST					
Bachelor's degree					

TOTAL NUMBER OF PART-TIME FACULTY: _____

F. What is the average weekly teaching load in contact hours of part-time faculty? _____

G. Of your part-time faculty reported in 5.E, how many are:

Employed Full-time in					Graduate Students	Not Graduate Students & Not Employed Full-time Anywhere	Total Number of Part-time Faculty
High School	Another Two-year College	Another Department of your own College	Four-year College	Industry or Other			
a	b	c	d	e	f	g	t

NOTE: You should have $t = a + b + c + d + e + f + g$
= the number reported in 5.E

6. Computer Access and Usage

A. How many personal computers, terminals and workstations are avail-
able for use of mathematics students in a mathematics lab?   _____

B. How many personal computers, terminals and workstations are available
for use of mathematics students in other locations on campus?   _____

C. How many personal computers, terminals and workstations are
available for the exclusive use of mathematics faculty?   _____

D. How many personal computers, terminals and workstations are avail-
able for use in mathematics classrooms?   _____

6.   Computer Access and Usage (Contd.)

   E. In a typical week, how many of your full-time faculty:

      i.   use a computer for classroom demonstrations? _____

      ii. assign homework requiring use of a computer? _____

      iii. use a computer to construct tests or homework assignments? _____

      iv. use a computer algebra system? _____

7.   Instructional Formats.

Please indicate the extent to which the following formats are employed at your institution. Place a check in the appropriate column.

	Is not being used	Is used by some faculty	Is used by most faculty
1. Standard lecture - recitation system (Class size under 40)			
2. Large lecture classes (over 40) with recitation sections			
3. Large lecture classes (over 40) with no recitation			
4. Organized program of independent study			
5. Courses by television (closed circuit or broadcast)			
6. Courses by film			
7. Courses by programmed instruction			
8. (CAI) Courses by computer-assisted instruction			
9. Modules			
10. Audio-tutorial			
11. (PSI) Personalized Systems of Instruction			
12. Other			

8.   Services for Students.

   A. MATH LABS

      i.   Does your institution operate a math lab or tutorial center?   Yes [ ]   No [ ]

      ii. Was your lab established after 1985?   Yes [ ]   No [ ]

      iii. Personnel of the math lab include (check all relevant categories):

               Full-time members of the mathematics staff   [ ]

               Part-time members of the mathematics staff   [ ]

               Students   [ ]

               Members of another department   [ ]

               Paraprofessionals   [ ]

               Other _____   [ ]

8.   Services for Students (Contd.)

B.   OTHER STUDENT SERVICES

Below is a list of services which might be available to your mathematics majors or more generally to students taking mathematics courses. Please check YES or NO for each item.

i.	Honors sections	Yes ☐	No ☐
ii.	Active mathematics club	Yes ☐	No ☐
iii.	A program of social activities for mathematics majors and faculty	Yes ☐	No ☐
iv.	Regularly offer opportunities for students to compete in math contests	Yes ☐	No ☐
v.	Mandatory placement exams	Yes ☐	No ☐
vi.	Advisory placement exams	Yes ☐	No ☐
vii.	Special lectures/colloquia for students	Yes ☐	No ☐

C.   NUMBER OF MATHEMATICS MAJORS

Please indicate the number of mathematics majors: _____

9.   Faculty Employment and Mobility.

A.   How many of your full-time faculty members were
     newly appointed on a full-time basis this year? _____

Of this number, **during the previous year 1989-90**, how many were:

With Doctorate (Math)	With Doctorate (Math Ed)	With Other Doctorate	With No Doctorate	
				i. enrolled in graduate school
				ii. teaching in a 4-year college or university
				iii. teaching in another 2-year institution
				iv. teaching in a secondary school
				v. employed by you part-time
				vi. employed in nonacademic position
				vii. otherwise occupied or unknown

B.   How many of your new appointments had previously taught in
     your department on either a part-time or a full-time basis? _____

C.   Of the full-time faculty **in 1989-90** who are no longer part of your full-time faculty, how many:

With Doctorate (Math)	With Doctorate (Math Ed)	With Other Doctorate	With No Doctorate	
				i. died, or retired
				ii. are teaching in a 4-year college or univ.
				iii. are teaching in a 2-year institution
				iv. left for a nonacademic position
				v. returned to graduate school
				vi. left for secondary school teaching
				vii. are otherwise occupied or unknown

10. Age, Sex and Ethnic Group of Full-time Faculty.
Record the number of full-time faculty members in each category:

	AGE							
	Under 30	30-34	35-39	40-44	45-49	50-54	55-59	60 and over
	(Born after 1960)	(Born 1956-60)	(Born 1951-55)	(Born 1946-50)	(Born 1941-45)	(Born 1936-40)	(Born 1931-35)	(Born before 1931)
Bachelor's								
Master's								
Doctor's								
Men								
Women								
American Indian/Alaskan native								
Asian/Pacific Islander								
Black (not of Hispanic origin)								
Mexican American, Puerto Rican or other Hispanic								
White (not of Hispanic origin)								

11. Professional Activities

Estimate **the number** of full-time members of your department who, in the past year,

A. attended at least one professional meeting _____ A

B. took additional mathematics or computer science courses _____ B

C. attended minicourses or short courses _____ C

D. gave talks at professional meetings _____ D

E. regularly read articles in professional journals _____ E

F. wrote expository and/or popular articles _____ F

G. published research articles _____ G

H. wrote textbooks _____ H

12. Problems of the 90's.

Below are some concerns cited by many departments. Please rate each of the concerns given below by **placing a check in the appropriate box.**

	Minor or no problem	Somewhat of a problem	Major problem	
A. Losing full-time faculty to industry/government	☐	n	n	A
B. Maintaining vitality of faculty	☐	n	☐	B
C. Advancing age of tenured faculty	n	n	n	C
D. Lack of experienced senior faculty	n	n	n	D
E. Staffing computer science courses	n	n	n	E
F. The need to use temporary faculty for instruction	n	n	n	F
G. Salary levels/patterns	n	n	n	G
H. Class size	n	☐	n	H

12. Problems of the 90's (Contd.)

Please rate by checking the appropriate box.

	Minor or no problem	Somewhat of a problem	Major problem	Please do not write in this space
I. Student motivation	☐	☐	☐	I
J. Remediation	☐	☐	☐	J
K. Library: holdings, access, etc.	☐	☐	☐	K
L. Departmental support sources (travel funds, staff, secretary, etc.)	☐	☐	☐	L
M. Computer facilities for faculty use	☐	☐	☐	M
N. Upgrading/maintenance of computer facilities	☐	☐	☐	N
O. Computer facilities for classroom use	☐	☐	☐	O
P. Office/lab facilities	☐	☐	☐	P
Q. Classroom/lab facilities	☐	☐	☐	Q
R. Coordinating and/or developing mathematics courses for vocational/technical programs	☐	☐	☐	R
S. Coordinating mathematics courses with high schools	☐	☐	☐	S
T. Coordinating mathematics courses with 4-year colleges and universities	☐	☐	☐	T
U. Lack of curricular flexibility because of transfer requirements	☐	☐	☐	U
V. Other, specify: _____	☐	☐	☐	V

Information supplied by: _____

Title: _____

Academic field: _____

Address: _____

Telephone: _____
Area code   Number   Extension

1. How long have you been in charge of the mathematics program? _____

2. Is the chairmanship rotating?   Yes ☐   No ☐

   If yes, what is the frequency of rotation? _____

3. If you have found any of the above questions difficult to interpret or to answer, let us know. We welcome comments or suggestions for future surveys.

Please return completed questionnaire by November 1, 1990, to:
American Mathematical Society, Attn: M. Foulkes, P.O. Box 6248, Providence, RI 02940-6248

Thanks to all who helped in completing this survey; we appreciate the time spent.

Donald J. Albers   Donald C. Rung