SURVEY OF UNDERGRADUATE PROGRAMS
IN
THE MATHEMATICAL SCIENCES

1980

General Instructions

You are asked to report on programs in the mathematical sciences under the cognizance of your department. If your college or university has on its campus separate departments of mathematics, statistics, applied mathematics, computer science, etc. (as listed in the 1980 Mathematical Sciences Administrative Directory published by the American Mathematical Society), we are sending this same questionnaire to each such department, which is being requested to fill out the entire questionnaire insofar as it is applicable to that department. Do not include data for branches or campuses of your institution that are administratively separate.

Please return completed questionnaire by 1 November 1980 to:

Conference Board of the Mathematical Sciences
1500 Massachusetts Avenue, N.W., Suite 457-8
Washington, D.C. 20005

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1. Name of your institution: _____

   Name of your department: _____

2. Administrative Structure:

   (a) Is your department a part of a larger administrative unit in the mathematical sciences (e.g., a division or school of mathematical sciences)? _____ Yes _____ No

   Name of larger unit _____

   (b) List other mathematical sciences departments at your institution. (If in doubt be inclusive.)

   Department _____ Name of Chairman _____

   Department _____ Name of Chairman _____

   Department _____ Name of Chairman _____

3. Changes in Administrative Structure:

   (a) Between 1975 and 1980 was your department together with one or more other departments, consolidated into a larger administrative unit (e.g., a Division of Mathematical Sciences or Department of Electrical Engineering and Computer Science)? Yes ____ No ____

   Names of other departments involved in this consolidation _____

   _____

   Name of larger administrative unit _____

   (b) Between 1975 and 1980 was your department divided with part of your faculty entering a new department (e.g., a new department of Statistics or Computer Science)? Yes ____ No ____

   Name of new department(s) _____

   (c) Was your present department created since 1975? Yes ____ No ____

   (d) Other major changes in administrative structure. Please specify:

   _____

   _____

4. Regular Undergraduate Program Courses

   Instructions for Question 4:

   (a) The undergraduate courses in column (1) in the following table are listed in three groups corresponding roughly to a division into mathematics, statistics, and computer science. Within each group they are listed in approximate "catalog order" for your convenience in locating a listing which is a reasonable approximation to your offerings. Additional blank spaces are provided to permit you to write in names of courses which do not fit reasonably under some listed title.

   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). There is a column for indicating the number of sections of a course.

   (b) For each course in column (1) that is being taught in the fall term of 1980 write in column (2) the total number of students who are enrolled in (any part of) the course in this term. Enter in column (3) the total number of sections of the course in the fall term of 1980. If a course is not being taught in the fall term but is expected to be taught during some other term of the current academic year, write L (for later) in column (2).

4. Undergraduate Courses

A. MATHEMATICS

Name of Course (or equivalent) (1)	Total Number of Students Enrolled Fall 1980 (2)	Total Number of Sections (3)	No. of Sections in which Students Use Computers (4)
1. Arithmetic for College Students			
2. General Mathematics (basic skills, operations)			
3. High School Geometry			
4. Elementary Algebra (High School)			
5. Intermediate Algebra (High School)			
6. College Algebra			
7. Trigonometry			
8. College Algebra and Trigonometry, combined			
9. Elementary Functions Precalculus mathematics			
10. Mathematics for Liberal Arts			
11. Finite Mathematics			
12. Mathematics of Finance			
13. Business Mathematics			
14. Mathematics for Elementary School Teachers			
15. Analytic Geometry			
16. Other pre-calculus: specify			
17. Calculus (math., phys., & eng. sciences)			
18. Calculus (biol., social & mgmt. sciences)			
19. Differential Equations			
20. Differential Equations and Linear Algebra			
21. Linear Algebra and/or Matrix Theory			
22. Modern Algebra			

4. Undergraduate Courses

Name of Course (or equivalent) (1)	Total Number of Students Enrolled Fall 1980 (2)	Total Number of Sections (3)	No. of Sections in which Students Use Computers (4)
23. Theory of Numbers			
24. Combinatorics			
25. Foundations of Mathematics			
26. Set Theory			
27. History of Mathematics			
28. Geometry			
29. Math. for Sec. School Teachers (methods, etc.)			
30. Mathematical Logic			
31. Advanced Calculus			
32. Advanced Math for Engineers and Physicists			
33. Vector Analysis			
34. Advanced Differential Equations			
35. Partial Differential Equations			
36. Numerical Analysis			
37. Applied Mathematics Mathematical Modelling			
38. Biomathematics			
39. Operations Research			
40. Complex Variables			
41. Real Analysis			
42. Topology			
43. Senior Seminar in Mathematics			
44. Independent Study in Mathematics			
45. Other Mathematics, Specify			

4. Undergraduate Courses

B. STATISTICS

Name of Course (or equivalent)	Total Number of Students Enrolled Fall 1980	Total Number of Sections	No. of Sections in which Students Use Computers
(1)	(2)	(3)	(4)
46. Elementary Statistics (no calculus prereq.)			
47. Probability (& Stat.) (no claculus prereq.)			
48. Mathematical Statistics (Calculus)			
49. Probability (Calculus)			
50. Applied Statistical Analysis			
51. Design & Analysis of Experiments			
52. Regression (and Correlation)			
53. Senior Seminar in Statistics			
54. Independent Study in Statistics			
55. Other Statistics, Specify			

C. COMPUTER SCIENCE

56. Computer Programming I (CS1)*			
57. Computer Programming II (CS2)			
58. Introduction to Computer Systems (CS3)			
59. Introduction to Discrete Structures			
60. Introduction to Computer Organization (CS4)			
61. Introduction to File Processing (CS5)			
62. Operating Systems and Computer Architecture (CS6)			
63. Data Structures and Algorithm Analysis (CS7)			
64. Organization of Programming Languages (CS8)			

*CS numbers refer to courses described in Curriculum '78, *Communications* of the Association for Computing Machinery, Vol. 22, No. 3 (March 1979) 147-166.

Name of Course (or equivalent)	Total Number of Students Enrolled Fall 1980	Total Number of Sections	No. of Sections in which Students Use Computers
65. Computers and Society (CS9)			
66. Operating Systems and Computer Architecture II (CS10)			
67. Database Management Systems Design (CS11)			
68. Artificial Intelligence (CS12)			
69. Algorithms (CS13)			
70. Software Design and Development (CS14)			
71. Theory of Programming Languages (CS15)			
72. Automata, Computability, and Formal Languages (CS16)			
73. Numerical Mathematics: Analysis (CS17)			
74. Numerical Mathematics: Linear Algebra (CS18)			
75. Senior Seminar in Computer Science			
76. Independent Study in Computer Science			
77. Other Computer Science, Specify			

5. Instructional Format

In the table on the following page are listed five courses from the list of question 4. For each course please enter the number of students taught during the fall term of 1980 in each of the formats listed in column (1). In the last line of the table enter the total enrollment in each of these courses in the fall term of 1980. If a course was not taught by your department during this term, enter zero.

Number of Students Enrolled, Fall 1980

(1)	(2)	(3)	(4)	(5)	(6)
	Finite Math. (11)	Calculus: Math., Eng., Phys. Sci. (17)	Calculus Biol., Soc., Mgmt. Sci. (18)	Computer Programming I (56)	Elementary Statistics (46)
1. Small Class (Less than 40 students)					
2. Large Class (Between 40 and 80 students)					
3. Lecture without recitation or quiz sections (over 80 students)					
4. Lecture with recitation or quiz sections (over 80 students)					
5. Self Paced Instruction					
6. Other Format Specify:					
7. Total enrollment in course in Fall, 1980					

6. Questions on Mathematical Science Faculty (Graduate and Undergraduate). Fall, 1980.

A. Full-time faculty: indicate the number of full-time mathematical science faculty members in your department in the table below, according to their highest degrees and subject fields in which these were earned:

Highest degree	In Math	In Stat.	In Computer Science	In Math Ed.	In another field (specify)
Doctor's degree					
Master's degree					
Bachelor's degree					

B. Part-time faculty, other than graduate students: indicate the numbers of part-time mathematical sciences faculty members in your department in the table below, by highest degrees and subject fields: (If none, check here _____.)

Highest degree	In Math	In Stat.	In Computer Science	In Math Ed.	In another field (specify)
Doctor's degree					
Master's degree					
Bachelor's degree					

C. Other Employment of Part-time Faculty

Of your part-time faculty, how many are:

(a) Employed full-time by some other university or college _____
(b) Employed full-time by a high school _____
(c) Employed full-time but not in education _____
(d) Not employed full-time anywhere _____

D. Teaching Assistants* (If none, check here _____.)

(a) Total number of teaching assistants in Fall, 1980 _____
(b) Number who are graduate students in your department _____
(c) Number who are graduate students in some other mathematical science department _____
(d) Number who are graduate students but not in the mathematical sciences _____
(e) Number who are not graduate students (e.g., who are still undergraduates) _____

E. Use of Teaching Assistants

Indicate the number of teaching assistants by their principal function:

(a) Teaching their own classes _____
(b) Conducting quiz sections or recitation sections _____
(c) Paper grading _____
(d) Providing tutorial or other individual assistance to students _____
(e) Other (please specify) _____

7. Age, Sex and Ethnic Group of Full-time Faculty, Fall 1980.

A. 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 & Over
Tenured, PhD								
Tenured, non-PhD								
Non-tenured, PhD								
Non-tenured, non-PhD								
Men								
Women								
Caucasian								
Asian								
Hispanic								
Black								
Amerindian								

*Graduate or undergraduate students holding instruction-related positions in your department.

B. Were any of your present faculty granted tenure in 1979-80? _____yes _____no
If yes, list the year of receipt of Ph.D. of each (more than once if more than one obtained the Ph.D. in that year). _____

8. A. What is the expected (or typical) teaching load in credit hours for your full-time faculty (excluding thesis supervision):

	Fall semester or quarter	Spring semester or quarter
(a) Professors		
(b) Associate Professors		
(c) Assistant Professors		
(d) Instructors with PhD		
(e) Instructors without PhD		

B. If there are significant departures from these expected teaching loads for certain classes of individuals, please describe:

9. Does your department have a sabbatical-leave plan under which a faculty member may have leave (one semester at full pay or a year at half pay, every seven years or so, or roughly equivalent)? _____yes _____no

If so, is this leave granted:

(a) automatically (without restriction) _____
(b) only with well-defined research plans _____
(c) other; specify: _____

If there is no regular sabbatical plan as described above, but other provision is made for paid leaves of absence, please comment:

10. Employment and Mobility of Faculty (Graduate and Undergraduate)

A. Are there any new full-time faculty in your department this year? _____yes _____no. If yes, how many were during the previous year 1979-80:

	Ph.D.'s	Non-Ph.D.
(1) enrolled in graduate school		
(2) teaching in a university or four-year college		
(3) teaching in a two-year institution		
(4) holding postdoctoral study/research appointments		
(5) employed in non-academic positions		
(6) otherwise occupied; specify:		

B. Of your full-time faculty last year, are there any who are no longer part of your full-time faculty? _____yes _____no. If yes, how many:

	Ph.D.'s	Non-Ph.D.
(1) died, or retired		
(2) are teaching in a univ. or four-year college		
(3) are teaching in a two-year institution		
(4) left for a non-academic position		
(5) returned to graduate school		
(6) are otherwise occupied; specify:		

C. Of your present full-time Ph.D. faculty members who were also part of your full-time staff in the year 1979-80, how many completed the requirements for their Ph.D. during 1979-80? _____

11. How many bachelor's degrees with major in mathematical sciences were awarded by your department between July 1979 and June 1980?_____. Indicate the number of these with each specialty:

Mathematics, general	_____	Applied Mathematics	_____
Statistics	_____	Secondary School Teaching	_____
Actuarial Science	_____	Operations Research	_____
Computer Science	_____	Other; Specify	_____

If you have found some question(s) difficult to interpret or to secure data for, please supply elucidating comments or suggestions which would be helpful to the Committee in future surveys:

Information supplied by: _____

Title and Department: _____

Institution and Campus: _____

Telephone: _____ Date _____