## Chapter 5

## DEPARTMENTAL CHARACTERISTICS

This chapter contains five tables on a variety of topics. Information is presented on various services available to departmental majors in the three disciplines, such as placement exams, honors programs, and graduate school advising. Mathematics requirements of mathematics and statistics tracks (or options) are given. The type of office space available to full-time facultyin the three disciplines, as well as the number of support staff positions and institutional travel funds expended in 1989-90 are presented.

Almost all of the topics in this chapter are new to the 1990 survey. Hence comparisons can be made only among the three disciplines and by type of school. The general theme is one of disparity between disciplines and types of departments on each issue.

For information on four-year college and university mathematics see
Tables D.1, D.2, D.3, D.4, D.5.
For information on four-year college and university statistics see
Tables D.2, D.3, D.4, D.5.
For information on four-year college and university computer science see
Tables D.1, D.3, D.4, D.5.

TABLE D. 1 Features available to majors in four-year college and university Departments of Mathematics, Statistics and Computer Science; percent of departments or programs with the feature by type of school: Fall 1990.

|  | Mathematics Departments |  |  |  | Computer Science Departments |  |  |  | Statistics |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \hline \text { Univ } \\ & \text { (PhD) } \end{aligned}$ | Univ <br> (MA) | College (BA) | $\begin{gathered} \hline \text { ALL MATH } \\ \text { DEPTS } \end{gathered}$ | $\begin{aligned} & \text { Univ } \\ & \text { (PhD) } \end{aligned}$ | Univ <br> (MA) | College (BA) | ALL CS DEPTS | $\begin{aligned} & \hline \text { Univ } \\ & \text { (PhD) } \end{aligned}$ |
| Number of departments | 165 | 236 | 1020 | 1421 | 136 | 105 | 238 | 479 | 53 |
| Placement exams | 62\% | 70\% | 45\% | 51\% | 60\% | 67\% | 92\% | 77\% | 38\% |
| ETS advanced placement credit | 95\% | 88\% | 85\% | 86\% | 79\% | 67\% | 100\% | 87\% | 26\% |
| Dept exam credit | 53\% | 28\% | 22\% | 27\% | 40\% | 34\% | 51\% | 44\% | 32\% |
| Honors calculus | 67\% | 24\% | 9\% | 18\% | 50\% | 23\% | 37\% | 38\% | 32\% |
| Dept or institution honors prog | 83\% | 67\% | 56\% | 61\% | 66\% | 54\% | 63\% | 62\% | 60\% |
| Intern/coop program | 44\% | 60\% | 49\% | 50\% | 83\% | 76\% | 51\% | 66\% | 26\% |
| Regular problem solving opportunities | 69\% | 63\% | 25\% | 37\% | 23\% | 31\% | 90\% | 58\% | 19\% |
| Research projects | 59\% | 47\% | 37\% | 41\% | 83\% | 80\% | 87\% | 84\% | 57\% |
| Senior exams | 6\% | 13\% | 34\% | 27\% | 1\% | 13\% | 2\% | 4\% | 0\% |
| Senior project or thesis | 23\% | 36\% | 28\% | 29\% | 50\% | 38\% | 83\% | 64\% | 19\% |
| Special lectures/ colloquium | 67\% | 66\% | 39\% | 47\% | 88\% | 74\% | 49\% | 66\% | 72\% |
| Study areas | 41\% | 46\% | 49\% | 47\% | 40\% | 41\% | 90\% | 65\% | 15\% |
| Math or CS club | 67\% | 86\% | 44\% | 54\% | 74\% | 90\% | 93\% | 87\% | 26\% |
| Regular social activities with faculty | 21\% | 45\% | 53\% | 48\% | 30\% | 55\% | 7\% | 24\% | 26\% |
| Graduate school advising | 90\% | 92\% | 96\% | 94\% | 89\% | 67\% | 92\% | 86\% | 79\% |
| Other career advising | 82\% | 92\% | 96\% | 94\% | 86\% | 90\% | 100\% | 94\% | 59\% |

TABLE D. 1 Placement exams are those administered by the department or institution. Departmental exam credit is college credit for passing departmental or institutional placement exams. In the 1970 CBMS survey, $48 \%$ of four-year colleges and university mathematics departments reported using their own placement exams as against $51 \%$ in 1990, while in 1970, $90 \%$ had advanced placement credit as against the 1990 figure of $86 \%$. The remaining categories were not reported in previous surveys.


FIGURE D.1.1 Features available to majors in four-year college and university Departments of Mathematics by type of school: Fall 1990.


FIGURE D.1.2 Features available to majors in four-year college and university Departments of Computer Science by type of school: Fall 1990.

TABLE D. 2 Percent of four year college and university Mathematics options (tracks) that require certain junior-senior courses or other curricular features in Departments of Mathematics by type of school; also for Statistics options (tracks) in Univ(PhD) Stat Depts: Fall 1990.

|  | Mathematics Departments |  |  | ALL Math Depts | Univ (PhD) Stat Depts |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Univ(PhD) | Univ(MA) | College(BA) |  |  |
| Number of departments | 165 | 236 | 1020 | 1421 | 53 |
| Total number of tracks offered | 581 | 675 | 1979 | 3235 | 83 |
| PERCENT OF TRACKS REQUIRING: |  |  |  |  |  |
| Analysis/Advanced Calculus | 70\% | 66\% | 65\% | 66\% | 30\% |
| Modern Algebra | 56\% | 70\% | 78\% | 72\% | 6\% |
| Geometry/Topology | 14\% | 33\% | 42\% | 35\% | 6\% |
| Linear Algebra | 73\% | 66\% | 69\% | 69\% | 47\% |
| Problem Solving/Modeling | 18\% | 18\% | 22\% | 21\% | 4\% |
| A sequence of 2 or more courses | 79\% | 65\% | 62\% | 65\% | 59\% |
| At least 6 Jr -Sr semester courses | 94\% | 92\% | 77\% | 83\% | 66\% |



TABLE D.2.1 Percent of four-year college and university Mathematics options (tracks) that require certain junior-senior courses or other curricular features in Departments of Mathematics by type of school: Fall 1990.

TABLE D. 2 Information on the percent of options that require, say, all of the first four courses, is not available. Information on computer science programs is presented in Tables CS.1, 2, 3, and 4.

TABLE D. 3 Type of office for full-time faculty in four-year college and university Departments of Mathematics, Statistics and Computer Science by type of school: Fall 1990.

|  | Number of <br> full-time <br> faculty | \% with <br> private <br> office | \% with 2 <br> person <br> office | $\%$ other <br> office |
| :--- | :---: | :---: | :---: | :---: |
| Math depts |  |  |  |  |
| Univ (PhD) | 6427 | $94 \%$ | $5 \%$ | $1 \%$ |
| Univ (MA) | 5058 | $78 \%$ | $17 \%$ | $5 \%$ |
| College (BA) | 7926 | $83 \%$ | $10 \%$ | $7 \%$ |
| $\quad$ALL MATH | 19411 | $85 \%$ | $10 \%$ | $5 \%$ |
| $\quad$ Stat depts |  |  |  |  |
| Univ (PhD) | 668 | $98 \%$ | $2 \%$ | $0 \%$ |
| Univ (MA) | 53 | $100 \%$ | $0 \%$ | $0 \%$ |
| College (BA) | 14 | - | - | - |
| $\quad$ ALL STAT | 735 | $98 \%$ | $2 \%$ | $0 \%$ |
| $\quad$ CS depts |  |  |  |  |
| Univ (PhD) | 2746 | $98 \%$ | $2 \%$ | $0 \%$ |
| Univ (MA) | 1408 | $98 \%$ | $2 \%$ | $0 \%$ |
| College (BA) | 1164 | $83 \%$ | $9 \%$ | $8 \%$ |
| ALL CS | 5318 | $95 \%$ | $3 \%$ | $2 \%$ |



FIGURE D.3.1. Type of office for full-time faculty in four-year college and university Departments of Mathematics, Statistics and Computer Science: Fall 1990.

TABLE D. 3 This is the first time this information has been collected.

TABLE D. 4 Average number of support staff positions per full-time faculty member in four-year college and university Departments of Mathematics, Statistics and Computer Science by type of school: Fall 1990.

|  | Univ (PhD) | Univ (MA) | College (BA) | ALL |
| :--- | :---: | :---: | :---: | :---: |
| Departments |  |  |  |  |
| Math depts | 0.14 | 0.09 | 0.06 | 0.1 |
| Stat depts | 0.28 | 0.09 | - | 0.28 |
| CS depts | 0.28 | 0.2 | 0.14 | 0.23 |



FIGURE D.4.1 Average number of support staff positions per full-time faculty member in four-year college and university Departments of Mathematics, Statistics and Computer Science by type of school: Fall 1990.

TABLE D. 4 Support staff are only those positions (or fractions) supported from institutional funds. Those support staff supported from research funds are not included. This table is new.

TABLE D. 5 Institutional travel funds expended in 1989-90 per full-time faculty member in four-year college and university Departments of Mathematics, Statistics and Computer Science by type of school.

|  | Univ <br> (PhD) | Univ <br> (MA) | College <br> (BA) | ALL |
| :--- | :---: | :---: | :---: | :---: |
| Department |  |  |  |  |
| Mathematics | $\$ 266$ | $\$ 246$ | $\$ 286$ | $\$ 269$ |
| Statistics | $\$ 316$ | $\$ 212$ | - | $\$ 302$ |
| Computer Science | $\$ 601$ | $\$ 385$ | $\$ 434$ | $\$ 507$ |



FIGURE D.5.1 Institutional travel funds expended in 1989-90 per full-time faculty member in four-year college and university Departments of Mathematics, Statistics and Computer Science by type of school.

TABLE D. 5 Travel funds from research grants or other external sources are not included. This is a new table.

