

Appendix IV

Four-Year Mathematics Questionnaire



SURVEY OF UNDERGRADUATE PROGRAMS IN THE MATHEMATICAL SCIENCES

General Information

Mathematics Questionnaire

As part of a random sample, your department has been chosen to participate in the NSF-funded CBMS2005 National Survey of Undergraduate Mathematical Sciences. Even though it is a very complicated survey, the presidents of all U.S. mathematical sciences organizations have endorsed it and ask for your cooperation.

We assure you that no individual departmental data, except the names of responding departments, will be released.

This survey provides data about the nation's undergraduate mathematical and statistical effort that is available from no other source. You can see the results of a similar survey five years ago by going to www.ams.org/cbms where the CBMS 2000 report is available on-line.

This survey studies the undergraduate programs in universities and colleges that offer at least a bachelors degree. Many of the departments in our random sample also offer higher degrees in mathematical sciences.

We have classified your department as belonging to a university or four-year college. If this is not correct, please contact David Lutzer, Survey Director, at 757-221-4006 or at Lutzer@math.wm.edu.

If you have any questions while filling out this survey form, please call the Survey Director, David Lutzer, at 757-221-4006 or contact him by e-mail at Lutzer@math.wm.edu.

Please report on undergraduate programs in the broadly defined mathematical sciences including applied mathematics, statistics, operations research, and computer science that are under the direction of your department. Do not include data for other departments or for branches or campuses of your institution that are budgetarily separate from your own.

Please return your completed questionnaire by October 15, 2005 in the enclosed envelope to:

**CBMS Survey
UNC-CH Survey Research Unit
730 Martin Luther King, Jr. Blvd
Suite 103, CB#2400, UNC-CH
Chapel Hill, NC 27599-2400**

Please retain a copy of your responses to this questionnaire in case questions arise.

A. General Information

Mathematics Questionnaire

PLEASE PRINT CLEARLY

A1. Name of your institution: _____

A2. Name of your department: _____

A3. We have classified your department as being part of a university or four-year college. Do you agree?

Yes..... (1) \longrightarrow If "Yes", go to A4 below.

No..... (2) \longrightarrow If "No", please call David Lutzer, Survey Director, at 757-221-4006 before proceeding any further.

A4. Your institution ispublic (1) ;private (2)

A5. Which programs leading to the following degrees does your department offer? Please check at least one box in each row.

Program	None (1)	Baccalaureate Degree (2)	Masters Degree (3)	Doctoral Degree (4)
a) Mathematics (including applied)				
b) Statistics				
c) Mathematics Education				
d) Computer Science				
e) Other (please specify below)				

If you offer bachelors, masters, or doctoral degrees in a mathematical science other than those in A5-a, b, c, and d, please enter the name(s) of the fields here: _____

A6. Responses to this question will be used to project total enrollment in the current (2005-2006) academic year based on the pattern of your departmental enrollments in 2004-2005. Do NOT include any numbers from dual-enrollment courses¹ in answering question A6.

a) Previous fall (2004) total student enrollment in your department's undergraduate courses (remember: do not include dual-enrollment courses¹): (1)

b) Previous academic year (2004-2005) total enrollment in your department's undergraduate courses, excluding dual enrollments¹ and excluding enrollments in summer school 2005: (2)

c) Total enrollment in your department's undergraduate courses in summer school 2005: (3)

d) Total enrollment in Calculus II in Winter/Spring term of 2005: (4)

e) Total number of sections in Calculus II in Winter/Spring term of 2005: (5)

¹ In this question, the term "dual-enrollment courses" is used to mean courses taught on a high school campus, by high school teachers, for which high school students may obtain high school credit and simultaneously college credit through your institution.

A. General Information cont.

Mathematics Questionnaire

A7. Which of the following best describes your institution's academic calendar? Check only one box.

a) Semester	
b) Trimester	
c) Quarter	
d) Other (please specify below)	

Academic calendar description if not a), b), or c): _____

A8. If your college or university does not recognize tenure, check the following box and follow the special instructions in subsequent sections for counting departmental faculty of various types.

A9. Contact person in your department:

A10. Contact person's e-mail address:

A11. Contact person's phone number including area code:

A12. Contact person's mailing address:

B. Dual Enrollment Courses

Mathematics Questionnaire

In this questionnaire the term dual enrollment courses refers to courses conducted on a high school campus and taught by high school teachers, for which high school students may obtain high school credit and simultaneously college credit through your institution.

B1. Does your department participate in any dual enrollment programs of the type defined above?

- Yes..... (1) \longrightarrow If "Yes", go to B2.
 No..... (2) \longrightarrow If "No", go to B6.

B2. Please complete the following table concerning your dual enrollment program (as defined above) for the previous term (spring 2005) and the current fall term of 2005.

Course	Total Dual Enrollments	Number of Dual-Enrollment Sections	Total Dual Enrollments	Number of Dual-Enrollment Sections
	Last Term =Spring 2005 (1)	Last Term =Spring 2005 (2)	This Term =Fall 2005 (3)	This Term =Fall 2005 (4)
a) College Algebra				
b) Pre-calculus				
c) Calculus I				
d) Statistics				
e) Other				

B3. For the dual enrollment courses in B2, to what extent are the following the responsibility of your department?

	Never Our Responsibility (1)	Sometimes Our Responsibility (2)	Always Our Responsibility (3)
a) Choice of textbook			
b) Design/approval of syllabus			
c) Design of final exam			
d) Choice of instructor			

B4. Does your department have a teaching evaluation program in which your part-time department faculty are required to participate?

- Yes..... (1) \longrightarrow If "Yes", go to B5.
 No..... (2) \longrightarrow If "No", go to B6.

B5. Are instructors in the dual-enrollment courses reported in B2 required to participate in the teaching evaluation program for part-time departmental faculty described in B4?

- Yes..... (1)
 No..... (2)

B. Dual Enrollment Courses cont.

Mathematics Questionnaire

B6. Does your department assign any of its own full-time or part-time faculty to teach courses conducted on a high school campus for which high school students may receive both high school and college credit (through your institution)?

Yes..... (1) → If "Yes", go to B7.

No..... (2) → If "No", go to Section C.

B7. How many students are enrolled in the courses conducted on a high school campus and taught by your full-time or part-time faculty and through which high school students may receive both high school and college credit (through your institution)?

*In subsequent sections we ask about course enrollments in your department and we ask that you **not** include any of the enrollments reported in this section B.*

C. Mathematics Courses (Fall 2005)

Mathematics Questionnaire

The following instructions apply throughout sections C, D, E, and F (pages 6-20).

- If your departmental course titles do not match exactly with the ones that we suggest, please use your best judgment to match them.
- Report distance-learning enrollments separately from other enrollments. A *distance-learning* section is one in which a majority of students receive the majority of their instruction by Internet, TV, correspondence courses, or other methods where the instructor is NOT physically present.
- Do NOT include any dual-enrollment sections or enrollments in these tables. (In this questionnaire, a *dual-enrollment* section is one that is conducted on a high-school campus, taught by a high-school teacher, and which allows students to receive high-school credit and simultaneously college credit from your institution for the course. These courses were reported in Section B.)
- For some courses (e.g., C-16, below) we ask you to list those lecture sections with several recitation/problem/laboratory sessions separately from other sections of the course that do not have such recitation/problem/laboratory sessions.
- Except in C16-2, C17-2, C18-2, C19-2, and D1-2, please count any lecture course along with its associated recitation/problem/laboratory sessions as one section of the course. Special instructions for C16-2, C17-2, C18-2, C19-2, and D1-2 are given in footnotes.
- Report a section of a course as being taught by a *graduate teaching assistant (GTA)* if and only if that section is taught *independently* by the GTA, i.e., when it is the GTA's own course and the GTA is the instructor of record.
- If your institution does not recognize tenure, report sections taught by your permanent full-time faculty in column (5) and sections taught by other full-time faculty in columns (6) or (7) as appropriate.
- Full-time faculty teaching in your department and holding joint appointments with other departments should be counted in column (5) if they are tenured, tenure-eligible, or permanent in your department. Faculty who are not tenured, tenure-eligible, or permanent in your department should be counted in column (8) if their fall 2005 teaching in your department is less than or equal to 50% of their total fall teaching assignment, and they should be reported in column (6) or (7) otherwise. (Example: If a tenured physics professor with a joint appointment in your department teaches a total of two courses in fall 2005, with exactly one being in your department, then that person would be counted as part-time in your department.)
- Do not fill in any shaded rectangles.
- Any unshaded rectangle that is left blank will be interpreted as reporting a count of zero.
- Except where specifically stated to the contrary, the tables in Sections C, D, E, and F deal with enrollments in fall term 2005.

Mathematics Questionnaire

C. Mathematics Courses (Fall 2005) cont.

Name of Course (or equivalent)	Total distance- education enrollments ^a	Total enrollment NOT in Col (2) and NOT dual enrollments ^b	Number of sections corresponding to Column (3)	Of the number in Column 4, how many sections are taught by:				
				Tenured or Tenure- eligible Faculty	Other Full-time Faculty with Ph.D.	Other Full-time Faculty without Ph.D.	Part- time Faculty	Graduate Teaching Assist. ^c
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
MATHEMATICS								
PRECOLLEGE LEVEL								
C1. Arithmetic/Basic Math								
C2. Pre-algebra								
C3. Elementary Algebra (high school level)								
C4. Intermediate Algebra (high school level)								
C5. Other precollege level courses								
INTRODUCTORY LEVEL, INCLUDING PRE-CALCULUS								
C6. Mathematics for Liberal Arts								
C7. Finite Mathematics								
C8. Business Mathematics (non-Calculus)								

^a A majority of students receive the majority of their instruction via Internet, TV, correspondence courses, or other method where the instructor is NOT physically present.
^b Do not include any dual-enrollments courses, i.e., courses taught on a high school campus by a high school instructor, for which high school students may obtain both high school credit and simultaneously college credit through your institution.
^c Sections taught independently by GTAs .

Mathematics Questionnaire

C. Mathematics Courses (Fall 2005) cont.

◆Cells left blank will be interpreted as zeros

Name of Course (or equivalent)	Total distance- education enrollments ^a	Total enrollment NOT in Col (2) and NOT dual enrollments ^b	Number of sections corres- ponding to Column (3)	Of the number in Column 4, how many sections are taught by:						Of the number in Column 4, how many sections:				
				Tenured or Tenure- eligible Faculty	(5)	(6)	(7)	(8)	(9)	Use graphing calculators	Include writing components such as reports or projects	Require computer assign- ments	Use on-line homework generating and grading packages	Assign group projects
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
MATHEMATICS														
INTRODUCTORY LEVEL, INCLUDING PRE-CALCULUS, CONT.														
C9. Mathematics for Elementary School Teachers I, II														
C10. College Algebra (beyond C4)														
C11. Trigonometry														
C12. College Algebra & Trigonometry (combined)														
C13. Elementary Functions, Pre-calculus, Analytic Geometry														
C14. Introduction to Mathematical Modeling														
C15. All other introductory level pre-calculus courses														

^a A majority of students receive the majority of their instruction via Internet, TV, correspondence courses, or other method where the instructor is NOT physically present.
^b Do not include any dual-enrollments courses, i.e., courses taught on a high school campus by a high school instructor, for which high school students may obtain both high school credit and simultaneously college credit through your institution.
^c Sections taught independently by GTAs.

Mathematics Questionnaire

C. Mathematics Courses (Fall 2005) cont.

◆ Cells left blank will be interpreted as zeros

Name of Course (or equivalent)	Total distance-education enrollment ^a	Total enrollment NOT in Col (2) and NOT dual enrollments ^b	Number of sections corresponding to Column (3)	Of the number in Column 4, how many sections are taught by:							Of the number in Column 4, how many sections:				
				Tenured or Tenure-eligible Faculty	Other Full-time Faculty with Ph.D.	Other Full-time Faculty without Ph.D.	Part-time Faculty	Graduate Teaching Assistants ^c	Use graphing calculators	Include writing components such as reports or projects	Require computer assignments	Use on-line homework generating and grading packages	Assign group projects		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)		
MATHEMATICS															
MAINSTREAM ^d CALCULUS I															
C16-1. Lecture with separately scheduled recitation/problem/laboratory sessions ^e															
C16-2. Number of recitation/problem/laboratory sessions associated with courses reported in C16-1. See example ^f below.															
C16-3. Other sections with enrollment of 30 or less															
C16-4. Other sections with enrollment above 30															
MAINSTREAM ^d CALCULUS II															
C17-1. Lecture with separately scheduled recitation/problem/laboratory sessions ^e															
C17-2. Number of recitation/problem/laboratory sessions associated with courses reported in C17-1. See example ^f below.															
C17-3. Other sections with enrollment of 30 or less															
C17-4. Other sections with enrollment above 30															

^a A majority of students receive the majority of their instruction via Internet, TV, correspondence courses, or other method where the instructor is NOT physically present.
^b Do not include any dual-enrollments courses, i.e., courses taught on a high school campus by a high school instructor, for which high school students may obtain both high school credit and simultaneously college credit through your institution.
^c Sections taught independently by GTAs.
^d A calculus course is mainstream if it leads to the usual upper division mathematical sciences courses.
^e Report a calculus class along with its recitation/problem/laboratory sessions as one section in C16-1, C17-1, C18-1, and C19-1.
^f Example: suppose your department offers four 100-student sections of a course and that each is divided into five 20-student discussion sessions that meet separately from the lectures. Report 4-5=20 recitation/problem/laboratory sessions associated with the course, even if each discussion meets several times per week.

C. Mathematics Courses (Fall 2005) cont.

Mathematics Questionnaire

◆ Cells left blank will be interpreted as zeros

Name of Course (or equivalent)	Total distance- education enrollment ^a	Total enrollment NOT in Col (2) and NOT dual enrollments ^b	Number of sections corres- ponding to Column (3)	Of the number in Column 4, how many sections are taught by:						Of the number in Column 4, how many sections:			
				Tenured or Tenure- eligible Faculty	Other Full-time Faculty with Ph.D.	Other Full-time Faculty without Ph.D.	Part- time Faculty	Graduate Teaching Assist. ^c	Use graphing calculators	Include writing components such as reports or projects	Require computer assign- ments	Use on-line homework generating and grading packages	Assign group projects
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
MATHEMATICS													
MAINSTREAM ^d CALCULUS III (and IV, etc)													
C18-1. Lecture with separately scheduled recitation/problem/laboratory sessions ^e													
C18-2. Number of recitation/problem/laboratory sessions associated with courses reported in C18-1. See example ^f below.													
C18-3. Other sections with enrollment of 30 or less													
C18-4. Other sections with enrollment above 30													
NON-MAINSTREAM ^d CALCULUS I													
C19-1. Lecture with separately scheduled recitation/problem/laboratory sessions ^e													
C19-2. Number of recitation/problem/laboratory sessions associated with courses reported in C19-1. See example ^f below.													
C19-3. Other sections with enrollment of 30 or less													
C19-4. Other sections with enrollment above 30													

^a A majority of students receive the majority of their instruction via Internet, TV, correspondence courses, or other method where the instructor is NOT physically present.
^b Do not include any dual-enrollments courses, i.e., courses taught on a high school campus by a high school instructor, for which high school students may obtain both high school credit and simultaneously college credit through your institution.
^c Sections taught independently by GTAs.
^d A calculus course is mainstream if it leads to the usual upper division mathematical sciences courses.
^e Report a calculus class along with its recitation/problem/laboratory sessions as one section in C16-1, C17-1, C18-1, and C19-1.
^f Example: suppose your department offers four 100-student sections of a course and that each is divided into five 20-student discussion sessions that meet separately from the lectures. Report 4-5=20 recitation/problem/laboratory sessions associated with the course, even if each discussion meets several times per week.

C. Mathematics Courses (Fall 2005) cont.

Mathematics Questionnaire

◆Cells left blank will be interpreted as zeros

Name of Course (or equivalent)	Total distance- education enrollment ^a (2)	Total enrollment NOT in Col (2) and NOT dual enrollments ^b (3)	Number of sections corresponding to Column (3) (4)	Of the number in Column 4, how many sections are taught by:				
				Tenured or Tenure- eligible Faculty (5)	Other Full-time Faculty with Ph.D. (6)	Other Full-time Faculty without Ph.D. (7)	Part- time Faculty (8)	Graduate Teaching Assist. ^c (9)
MATHEMATICS								
CALCULUS LEVEL, CONT.								
C20. Non-Mainstream ^d Calculus, II, III, etc.								
C21. Differential Equations and Linear Algebra (combined)								
C22. Differential Equations								
C23. Linear Algebra or Matrix Theory								
C24. Discrete Mathematics								
C25. Other calculus-level courses								

^a A majority of students receive the majority of their instruction via Internet, TV, correspondence courses, or other method where the instructor is NOT physically present.

^b Do not include any dual-enrollments courses, i.e., courses taught on a high school campus by a high school instructor, for which high school students may obtain both high school credit and simultaneously college credit through your institution.

^c Sections taught independently by GTAs.

^d A calculus course is mainstream if it leads to the usual upper division mathematical sciences courses.

C. Mathematics Courses (Fall 2005) cont.

In reporting on advanced courses, please pay special attention to the following instructions:

- If an undergraduate course contains a mixture of graduate and undergraduate students, report them all in Column (2).
- If your institution does not recognize tenure, report sections taught by your permanent faculty in Column (4).
- Make sure that no course is reported in more than one row.

◆Cells left blank will be interpreted as zeros

Name of Course (or equivalent) (1)	Total enrollment Fall 2005 (2)	Number of sections corresponding to Column (2)	Number of sections corresponding to Column (3) taught by Tenured or Tenure-eligible Faculty (4)	Was this course taught in ANY term of the previous academic year? Y(es) / N(o) (5)	Will this course be offered in the next term (Spring 2006)? Y(es) / N(o) (6)
MATHEMATICS					
ADVANCED UNDERGRADUATE LEVEL					
C26. Introduction to Proofs					
C27-1. Modern Algebra I					
C27-2. Modern Algebra II					
C28. Number Theory					
C29. Combinatorics					
C30. Actuarial Mathematics					
C31. Logic/Foundations (not C26)					
C32. Discrete Structures					
C33. History of Mathematics					
C34. Geometry					

C. Mathematics Courses (Fall 2005) cont.

Mathematics Questionnaire

◆ Cells left blank will be interpreted as zeros

Name of Course (or equivalent) (1)	Total enrollment Fall 2005 (2)	Number of sections corresponding to Column (2) (3)	Number of sections corresponding to Column (3) taught by Tenured or Tenure-eligible Faculty (4)	Was this course taught in ANY term of the previous academic year? Y(es) / N(o) (5)	Will this course be offered in the next term (Spring 2006)? Y(es) / N(o) (6)
MATHEMATICS					
ADVANCED UNDERGRADUATE LEVEL, CONT.					
C35. Mathematics for Secondary School Teachers I and II (methods, special content, etc.)					
C36-1. Advanced Calculus and/or Real Analysis, I					
C36-2. Advanced Calculus and/or Real Analysis, II					
C37. Advanced Mathematics for Engineering and Physics, I and II					
C38. Advanced Linear Algebra (beyond C21, C23)					
C39. Vector Analysis					
C40. Advanced Differential Equations (beyond C22)					
C41. Partial Differential Equations					
C42. Numerical Analysis I and II					
C43. Applied Mathematics (Modeling)					

C. Mathematics Courses (Fall 2005) cont.

Mathematics Questionnaire

◆Cells left blank will be interpreted as zeros

Name of Course (or equivalent) (1)	Total enrollment Fall 2005 (2)	Number of sections corresponding to Column (2) (3)	Number of sections corresponding to Column (3) Taught by Tenured or Tenure-eligible Faculty (4)	Was this course taught in ANY term of the previous academic year? Y(es) / N(o) (5)	Will this course be offered in the next term (Spring 2006)? Y(es) / N(o) (6)
MATHEMATICS					
ADVANCED UNDERGRADUATE LEVEL, CONT.					
C44. Complex Variables					
C45. Topology					
C46. Mathematics of Finance (not C30, C43)					
C47. Codes and Cryptology					
C48. Biomathematics					
C49. Senior Seminar/Independent Study in Mathematics					
C50. All other advanced level mathematics (excluding Probability, Statistics, or Operations Research courses)					

D. Probability & Statistics Courses (Fall 2005)

Please refer to the course reporting instructions at the beginning of Section C.

D. Does your department offer any Probability and/or Statistics Courses?

Yes..... (1) → If "Yes", go to D1-1, below.
 No..... (2) → If "No", go to Section E.

◆ Cells left blank will be interpreted as zeros

Name of Course (or equivalent)	Total distance-education enrollment ^a	Total enrollment NOT in Col (2) and NOT dual enrollments ^b	Number of sections corresponding to Column (3)	Of the number in Column 4, how many sections are taught by:							Of the number in Column 4, how many sections:			
				Tenured or Tenure-eligible Faculty (3)	(5)	Other Full-time Faculty with Ph.D. (6)	(7)	Other Full-time Faculty without Ph.D. (8)	(9)	Use graphing calculators (10)	Include writing components such as reports or projects (11)	Require computer assignments (12)	Use on-line homework generating and grading packages (13)	Assign group projects (14)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
PROBABILITY & STATISTICS														
ELEMENTARY LEVEL														
D1. Elementary Statistics (no calculus prerequisite):														
D1-1. Lecture with separately scheduled recitation/problem/laboratory sessions ^d														
D1-2. Number of recitation/problem/laboratory sessions associated with courses reported in D1-1 ^e														
D1-3. Other sections with enrollment of 30 or less														
D1-4. Other sections with enrollment above 30														
D2. Probability & Statistics (no calculus prerequisite)														
D3. Other elementary level Probability & Statistics courses														

^a A majority of students receive the majority of their instructor via Internet, TV, correspondence courses, or other methods where the instructor is NOT physically present.
^b Do not include any dual-enrollments courses, i.e., courses taught on a high school campus by a high school instructor, for which high school students may obtain both high school credit and simultaneously college credit through your institution.
^c Sections taught independently by GTAs.
^d A class along with its recitation/problem/laboratory sessions is to be counted as one section in D1-1.
^e Example: suppose your department offers four 100-student sections of a course and that each is divided into five 20-student discussion sessions that meet separately from the lectures. Report 4-5-20 recitation/problem/laboratory sessions associated with the course, even if each discussion meets several times per week.

Mathematics Questionnaire

D. Probability & Statistics Courses (Fall 2005) cont.

◆Cells left blank will be interpreted as zeros

Name of Course (or equivalent) (1)	Total enrollment Fall 2005 (2)	Number of sections corresponding to Column (2) (3)	Number of sections corresponding to Column (3) taught by Tenured or Tenure-eligible Faculty (4)	Was this course taught in ANY term of the previous academic year? Y(es) / N(o) (5)	Will this course be offered in the next term (Spring 2006)? Y(es) / N(o) (6)
PROBABILITY & STATISTICS					
INTERMEDIATE AND ADVANCED LEVEL					
D4. Mathematical Statistics (calculus prerequisite)					
D5. Probability (calculus prerequisite)					
D6. Combined Probability & Statistics (calculus prerequisite)					
D7. Stochastic Processes					
D8. Applied Statistical Analysis					
D9. Design & Analysis of Experiments					
D10. Regression (and Correlation)					
D11. Biostatistics					
D12. Nonparametric Statistics					
D13. Categorical Data Analysis					
D14. Sample Survey Design & Analysis					
D15. Statistical Software & Computing					
D16. Data Management					
D17. Senior Seminar/ Independent Studies					
D18. All other upper level Probability & Statistics courses					

E. Operations Research Courses (Fall 2005)

Mathematics Questionnaire

Please refer to the course reporting instructions at the beginning of Section C.

E. Does your department offer any Operations Research courses?

Yes..... (1) \longrightarrow If "Yes", go to E1, below.
 No..... (2) \longrightarrow If "No", go to Section F.

◆Cells left blank will be interpreted as zeros

Name of Course (or equivalent) (1)	Total enrollment Fall 2005 (2)	Number of sections corresponding to Column (2) (3)	Number of sections corresponding to Column (3) Taught by Tenured or Tenure-eligible Faculty (4)	Was this course taught in ANY term of the previous academic year? Y(es) / N(o) (5)	Will this course be offered in the next term (Spring 2006)? Y(es) / N(o) (6)
OPERATION RESEARCH					
E1. Intro. to Operations Research					
E2. Intro. to Linear Programming					
E3. All other O.R. courses					

F. Computer Science Courses (Fall 2005)

- Please refer to the course reporting instructions at the beginning of Section C.
- In December 2001, a joint IEEE Computer Society/ACM Task Force issued its recommendations on "Model Curricula for Computing." That report replaced the curricular recommendations published by ACM in 1991 and is available from <http://www.computer.org/education/cc2001/>. Course numbers and, to the degree possible, course names in the table below are taken from the detailed course outlines in the appendices of that CC2001 report.

F. Does your department offer any Computer Sciences courses?

Yes..... (1) → If "Yes", go to F1, below.
 No..... (2) → If "No", go to Section G

◆ Cells left blank will be interpreted as zeros

Name of Course (or equivalent)	Total distance-education enrollment ^a (2)	Total enrollment NOT in Col (2) and NOT dual enrollments ^b (3)	Number of sections of corresponding to Column (3) (4)	Of the number in Column 4, how many sections are taught by:				
				Tenured or Tenure-eligible Faculty (5)	Other Full-time Faculty with Ph.D. (6)	Other Full-time Faculty without Ph.D. (7)	Part-time Faculty (8)	Graduate Teaching Assist. ^c (9)
(1)								
COMPUTER SCIENCE								
GENERAL EDUCATION COURSES								
F1. Computers and Society, Issues in CS								
F2. Intro. to Software Packages								
F3. Other CS General Education Courses								

^a A majority of students receive the majority of their instruction via Internet, TV, correspondence courses, or other method where the instructor is NOT physically present.
^b Do not include any dual-enrollments (see Section B).
^c Sections taught independently by GTAs.

F. Computer Science Courses (Fall 2005) cont.

Mathematics Questionnaire

Name of Course (or equivalent) (1)	Total distance- education enrollment ^a (2)	Total enrollment NOT in Col (2) and NOT dual enrollments ^b (3)	Number of sections corresponding to Column (3) (4)	Of the number in Column 4, how many sections are taught by:				
				Tenured or Tenure- eligible Faculty (5)	Other Full-time Faculty with Ph.D. (6)	Other Full-time Faculty without Ph.D. (7)	Part- time Faculty (8)	Graduate Teaching Assist. ^c (9)
COMPUTER SCIENCE								
INTRODUCTORY CS COURSES								
F4. Computer Programming I (CS101 or 111) ^d								
F5. Computer Programming II (CS102 or 112 and 113) ^d								
F6. Discrete Structures for CS (CS105, 106, or 115) ^d , but not courses C24 or C32 in Section C above								
F7. All other introductory Level CS courses								
INTERMEDIATE LEVEL								
F8. Algorithm Design and Analysis (CS210) ^d								
F9. Computer Architecture (CS220, 221, or 222) ^d								
F10. Operating Systems (CS225, 226) ^d								

^a A majority of students receive the majority of their instruction via Internet, TV, correspondence courses, or other method where the instructor is NOT physically present.

^b Do not include any dual-enrollments (see Section B).

^c Sections taught independently by GTAs.

^d Course numbers from CC2001.

F. Computer Science Courses (Fall 2005) cont.

Mathematics Questionnaire

◆Cells left blank will be interpreted as zeros

Name of Course (or equivalent) (1)	Total distance- education enrollments ^a (2)	Total enrollment NOT in Col (2) and NOT dual enrollments ^b (3)	Number of sections corresponding to Column (3) (4)	Of the number in Column 4, how many sections are taught by:				
				Tenured or Tenure- eligible Faculty (5)	Other Full-time Faculty with Ph.D. (6)	Other Full-time Faculty without Ph.D. (7)	Part- time Faculty (8)	Graduate Teaching Assist. ^c (9)
COMPUTER SCIENCE								
INTERMEDIATE LEVEL CONT.								
F11. Net-centric Computing (CS230) ^d								
F12. Programming Language Translation (CS240) ^d								
F13. Human-Computer Interaction (CS250) ^d								
F14. Artificial Intelligence (CS260, 261, 262) ^d								
F15. Databases (CS270, 271) ^d								
F16. Social and Professional Issues in Computing (CS280) ^d								
F17. Software Development (CS290, 291, 292) ^d								
F18. All other intermediate Level CS courses								
UPPER LEVEL								
F19. All upper level CS Courses (numbered 300 or above in CC2001)								

^a A majority of students receive the majority of their instruction via Internet, TV, correspondence courses, or other method where the instructor is NOT physically present.

^b Do not include any dual-enrollments (see Section B).

^c Sections taught independently by GTAs.

^d Course numbers from CC2001.

G. Faculty Profile (Fall 2005)

Mathematics Questionnaire

G1. Number of faculty in your department in fall 2005

NOTES for G1:

- In responding to questions in this section, use the same rules for distinguishing between full-time and part-time faculty that you used in sections C, D, E, and F. Often, one easy way to distinguish between full-time and part-time faculty is to ask whether a given faculty member participates in the same kind of insurance and retirement programs as does your department chair. Part-time faculty are often paid by the course and do not receive the same insurance and retirement benefits as does the department chair.
- If your institution does not recognize tenure, please report departmental faculty who are permanent on line G1-(a) and report all other faculty on lines G1-(c), (d), or (e) as appropriate.

- (a) Number of full-time tenured faculty (not including visitors or those on leave) in fall 2005 (1)
- (b) Number of full-time tenure-eligible-but-not-tenured faculty (not including visitors or those on leave) in fall 2005 (2)
- (c) Number of tenured or tenure-eligible faculty on leave in fall 2005 (3)
- (d) Number of post-docs in your department in fall 2005 (where a postdoctoral appointment is a temporary position primarily intended to provide an opportunity to extend graduate training or to further research) (4)
- (e) Number of full-time faculty in your department in fall 2005 not included in (a), (b), (c), or (d) and who hold visiting appointments (5)
- (f) Number of full-time faculty in your department in fall 2005 who are not in (a), (b), (c), (d), or (e) (6)
- (g) Number of part-time faculty in your department in fall 2005 (7)

G2. What is the expected (or average) teaching assignment for the tenured and tenure-eligible faculty reported G1-(a), (b)? (If your institution does not recognize tenure, report on those faculty who are “permanent full-time.”)

- (a) Expected classroom contact hours per week for tenured and tenure-eligible faculty in fall 2005 (1)
- (b) Expected classroom contact hours per week for tenured and tenure-eligible faculty last year in winter/spring 2005 (2)

H. Undergraduate Program (Fall 2005)

Mathematics Questionnaire

If you do not offer a major in a mathematical science, check here and go to H9. Otherwise go to H1.

H1. Please report the total number of your departmental majors who received their bachelors degrees from your institution between 01 July 2004 and 30 June 2005. Include joint majors and double majors¹ (1)

H2. Of the undergraduate degrees described in H1, please report the number who majored in each of the following categories. Each student should be reported only once. Include all double and joint majors¹ in your totals. Use "Other" category for a major in your department who does not fit into one of the earlier categories.

Area of Major	Male (1)	Female (2)
a) Mathematics (including applied)		
b) Mathematics Education		
c) Statistics		
d) Computer Science		
e) Actuarial Mathematics		
f) Operations Research		
g) Joint ¹ Mathematics and Computer Science		
h) Joint ¹ Mathematics and Statistics		
i) Joint ¹ Mathematics and (Business or Economics)		
j) Other		

H3. Does your department teach any upper division Computer Science courses?

Yes..... (1)

No..... (2)

H4. Can a major in your department count some upper division Computer Science course(s) from some other department toward the upper division credit hour requirement for your departmental major?

Yes..... (1)

No..... (2)

H5. Does your department offer any upper division Statistics courses?

Yes..... (1)

No..... (2)

H6. Can a major in your department count some upper division Statistics course(s) from some other department toward the upper division credit hour requirement for your departmental major?

Yes..... (1)

No..... (2)

¹ A "double major" is a student who completes the degree requirements of two separate majors, one in mathematics and a second in another program or department. A "joint major" is a student who completes a single major in your department that integrates courses from mathematics and some other program or department and typically requires fewer credit hours than the sum of the credit hours required by the two separate majors.

H. Undergraduate Program (Fall 2005) cont.

Mathematics Questionnaire

H7. To what extent must majors in your department complete the following? Check one box in each row.

	Required of all majors (1)	Required of some but not all majors (2)	Not required of any major (3)
a) Modern Algebra I			
b) Modern Algebra I plus some other upper division Algebra course			
c) Real Analysis I			
d) Real Analysis I plus some other upper division Analysis course			
e) at least one Computer Science course			
f) at least one Statistics course			
g) at least one applied mathematics course beyond course C-25 (in Section C)			
h) a capstone experience (e.g. a senior project, a senior thesis, a senior seminar, or an internship)			
i) an exit exam (written or oral)			

H8. Many departments today use a spectrum of program-assessment methods. Please check all that apply to your department's undergraduate program-assessment efforts during the last six years.

- (a) We conducted a review of our undergraduate program that included one or more reviewers from outside of our institution (1)
- (b) We asked graduates of our undergraduate program to comment on and suggest changes in our undergraduate program (2)
- (c) Other departments at our institution were invited to comment on the preparation that their students received in our courses (3)
- (d) Data on our students' progress in subsequent mathematics courses was gathered and analyzed (4)
- (e) We have a placement system for first-year students and we gathered and analyzed data on its effectiveness (5)
- (f) Our department's program assessment activities led to changes in our undergraduate program (6)

H. Undergraduate Program (Fall 2005) cont.

Mathematics Questionnaire

H9. General Education Courses: Does your institution require all bachelors graduates to have credit for a quantitative literacy course as part of their general education requirements? Choose one of the following.

(a) Yes, all bachelors graduates must have such credit ⁽¹⁾ → if (a), go to H10.

(b) Not (a), but all students in the academic unit to which our department belongs must have such credit¹ ⁽²⁾ → if (b), go to H10.

(c) neither (a) nor (b) ⁽³⁾ → if (c), go to H13.

H10. If you chose (a) or (b) in H9, is it true that all students (to whom the quantitative requirement applies) must fulfill it by taking a course in your department?

Yes..... ⁽¹⁾

No..... ⁽²⁾

H11. Which courses in your department can be used to fulfill the general education quantitative requirement in H9?

(a) Any freshman course in our department ⁽¹⁾ → go to H13.

(b) Only certain courses in our department ⁽²⁾ → go to H12.

H12. If you chose H11(b), which of the following departmental courses can be used to fulfill the general education quantitative requirement? Check all that apply.

Course	Can be used
a) College Algebra and/or Pre-calculus	
b) Calculus	
c) Mathematical Modeling	
d) a basic Probability and/or Statistics course	
e) a special general education course in our department not listed above	
f) some other course(s) in our department not listed above	

H13. Does your department or institution operate a mathematics lab or tutoring center intended to give students out-of-class help with mathematics or statistics problems?

Yes..... ⁽¹⁾ → If "Yes", go to H14.

No..... ⁽²⁾ → If "No", go to H15.

¹ For example, you would check H9(b) if students in the College of Fine Arts do not have a quantitative literacy requirement, and yet all students in the College of Science (to which our department belongs) must complete a quantitative literacy requirement.

H. Undergraduate Program (Fall 2005) cont.

Mathematics Questionnaire

H14. Please check all services available through the mathematics lab or tutoring center mentioned in H13.

- (a) Computer-aided instruction (1)
- (b) Computer software such as computer algebra systems or statistical packages (2)
- (c) Media such as video tapes, CDs, or DVDs (3)
- (d) Tutoring by students (4)
- (e) Tutoring by paraprofessional staff (5)
- (f) Tutoring by part-time mathematics faculty (6)
- (g) Tutoring by full-time mathematics faculty (7)
- (h) Internet resources (8)

H15. Please check all of the opportunities available to your undergraduate mathematics students.

- (a) Honors sections of departmental courses (1)
- (b) An undergraduate Mathematics Club (2)
- (c) Special mathematics programs to encourage women (3)
- (d) Special mathematics programs to encourage minorities (4)
- (e) Opportunities to participate in mathematics contests (5)
- (f) Special mathematics lectures/colloquia not part of a mathematics club (6)
- (g) Mathematics outreach opportunities in local K-12 schools (7)
- (h) Undergraduate research opportunities in mathematics (8)
- (i) Independent study opportunities in mathematics (9)
- (j) Assigned faculty advisers in mathematics (10)
- (k) Opportunity to write a senior thesis in mathematics (11)
- (l) A career day for mathematics majors (12)
- (m) Special advising about graduate school opportunities in mathematical sciences (13)
- (n) Opportunity for an internship experience (14)
- (o) Opportunity to participate in a senior seminar (15)

H. Undergraduate Program (Fall 2005) cont.

Mathematics Questionnaire

H16. If you offer a major in some mathematical science, please give your best estimate of the percentage of your department's graduating majors from the previous academic year (reported in H1) in each of the following categories. If you do not offer any mathematical sciences major, go to Section I

- (a) who went into pre-college teaching % (1)
- (b) who went to graduate school in the mathematical sciences % (2)
- (c) who went to professional school or to graduate school outside of the mathematical sciences % (3)
- (d) who took jobs in business, industry, government, etc % (4)
- (e) who had other post-graduation plans known to the department % (5)
- (f) whose plans are not known to the department % (6)

I. Pre-service Teacher Education in Mathematics

Mathematics Questionnaire

I-1. Does your institution offer a program or major leading to certification in some or all of grades K-8?

Yes..... (1) → If "Yes", go to I-2.

No..... (2) → If "No", go to I-14.

I-2. Do members of your department serve on a committee that determines what mathematics courses are part of that certification program?

Yes..... (1)

No..... (2)

I-3. Does your department offer a course or course-sequence that is designed specifically for the pre-service K-8 teacher certification program?

Yes..... (1) → If "Yes", go to I-4.

No..... (2) → If "No", go to I-9.

I-4. Are you offering more than one section of the special course for pre-service K-8 teachers in fall 2005?

Yes..... (1) → If "Yes", go to I-5.

No..... (2) → If "No", go to I-8.

I-5. Is there a designated departmental coordinator for your multiple sections of the special course for pre-service K-8 teachers in fall 2005?

Yes..... (1) → If "Yes", go to I-6.

No..... (2) → If "No", go to I-8.

I-6. Please choose the box that best describes the coordinator mentioned in I-5.

- (a) tenured or tenure-eligible (1)
- (b) a postdoc¹ (2)
- (c) a full-time faculty member not in (b) who holds a *visiting* appointment in your department ... (3)
- (d) a full-time faculty member *without* a doctorate who is not in (a), (b), or (c) (4)
- (e) a full-time faculty member *with* a doctorate who is not in (a), (b), (c), or (d) (5)
- (f) a part-time faculty member (6)
- (g) a graduate teaching assistant (7)

¹ A postdoctoral appointment is a temporary position primarily intended to provide an opportunity to extend graduate education or to further research.

I. Pre-service Teacher Education in Mathematics cont.

Mathematics Questionnaire

I-7. Given that you offer multiple sections of the special course for pre-service K-8 teachers in fall 2005, is it true that all sections of that course use the same textbook?

Yes..... (1)

No..... (2)

I-8. During which year of their college careers are your pre-service K-8 teachers most likely to take your department's special course for pre-service K-8 teachers? If you have two such courses, consider only the first in responding to this question. Please check just one box.

a) Freshman	
b) Sophomore	
c) Junior	
d) Senior	

I-9. Are there any sections of other courses in your department (i.e., other than the special course for K-8 teachers mentioned in I-3) that are restricted to or designated for pre-service K-8 teachers?

Yes..... (1)

No..... (2)

Special instructions for questions I-10, I-11, I-12, and I-13: Many institutions have different certification requirements for pre-service elementary teachers preparing for early grades and those preparing for later grades. However, there is no nationwide agreement on which grades are "early grades" and which are "later grades" except that grades 1 and 2 are "early" and grades 6 and above are usually considered "later grades," and that is how we use the terms in the next four questions.

I-10. Does your K-8 pre-service program have different requirements for students preparing to teach early grades and for those planning to teach later grades?.

Yes..... (1) \longrightarrow If "Yes", go to I-12.

No..... (2) \longrightarrow If "No", go to I-11.

I-11. Given that your pre-service K-8 teacher education program *does not* distinguish between preparing for certification in early and later grades, how many courses are all pre-service elementary teachers required to take in your department (including general education requirements, if any)?

Now go to I-13 and put all of your answers into column (3).

I-12. Given that your pre-service K-8 teacher education program *does* distinguish between preparing for certification to teach early grades and later grades, how many courses are pre-service K-8 teachers required to take in your department (including general education requirements, if any)?

(a) Number of courses required for early grade certification (1)

(b) Number of courses required for later grade certification (2)

Now go to I-13 and put all of your answers into columns (1) and (2).

I. Pre-service Teacher Education in Mathematics cont.

Mathematics Questionnaire

I-13. In your judgement, which three of the following courses in your department are most likely to be taken by pre-service K-8 teachers? If your program does NOT distinguish between early and later grades, please use the column (3) for your answers and check a total of only three boxes. If your program DOES distinguish between early and later grades, check exactly three boxes in each of columns (1) and (2) and ignore column (3).

Courses	Three most likely for early grade certification (1)	Three most likely for later grade certification (2)	Three most likely given that we do not distinguish between early & later grade (3)
a) A multiple-term course designed for elementary teachers			
b) A single-term course designed for elementary teachers			
c) College Algebra			
d) Elementary Functions, Pre-calculus, Analytic Geometry			
e) Introduction to Mathematical Modeling			
f) Mathematics for Liberal Arts			
g) Finite Mathematics			
h) Mathematics History			
i) Calculus			
j) Geometry			
k) Statistics			

I-14. How do students at your institution who are seeking certification for teaching mathematics in secondary schools learn about the history of mathematics? Choose one of the following boxes.

- (a) We have no secondary school mathematics certification program (1)
- (b) Students in our secondary school mathematics program are required to take a course in mathematics history (2)
- (c) There is no required mathematics history course for our secondary school mathematics certification students and our secondary school certification students learn mathematics history from other courses they are required to take (3)
- (d) Students in our secondary school mathematics certification program are not required to learn about mathematics history (4)

I. Pre-service Teacher Education in Mathematics cont.

Mathematics Questionnaire

I-15. Does your department offer any courses that are part of a graduate degree in mathematics education?

- (a) No (1)
- (b) Yes, and the degree is granted through our department (2)
- (c) Yes, and the degree is granted through some other department or unit in our institution (3)

Thank you for completing this questionnaire. We know it was a time-consuming process and we hope that the resulting survey report, which we hope to publish in spring 2007, will be of use to you and your department.

Please keep a copy of your responses to this questionnaire in case questions arise.