

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 CBMS2015 National Survey of Undergraduate Mathematical Sciences Programs. The presidents of all U.S. mathematical sciences organizations have endorsed it and ask for your cooperation, even though it is a very complicated survey.

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 fielded five years ago by going to www.ams.org/cbms, where the CBMS 2010 report is available online.

All departments in this survey are in universities and colleges that offer at least a bachelor's degree. They may or may not offer a major in mathematics. 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 Ellen Kirkman, Survey Director, at 336-758-5351 or at Kirkman@wfu.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. Also, if your department is broader than just mathematics (e.g., Division of Mathematics and Sciences), please report only on the mathematics courses (as broadly defined here).

This survey may be completed either online or using a hard-copy questionnaire. We recommend using the online system because it will do some of the work for you; e.g., it will automatically skip those questions that are not applicable (based on the response you give), gray out portions of questions that do not apply, remind you of previous responses, and provide definitions when you let your cursor hover over certain highlighted words.

If you have any questions while filling out this survey form, please call the Survey Director, Ellen Kirkman, at 336-758-5351 or contact her by e-mail at Kirkman@wfu.edu. For help with the online questionnaire, call Westat at 855-680-1849 or send an email to cbms2015@westat.com.

Please complete the questionnaire by October 31, 2015, either online or by mailing a hard copy to:

**CBMS Survey
Westat
1600 Research Boulevard, RB 3103
Rockville, MD 20850-3129**

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

A. General Information

Mathematics Questionnaire

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 → If Yes, go to A4 below.No → If No, please call Ellen Kirkman, Survey Director, at 336-758-5351.A4. If your college or university does not recognize tenure, check this box.

A5. Contact person in your department:

A6. Contact person's e-mail address:

A7. Contact person's phone number including area code:

A8. Contact person's mailing address:

a. Street

b. Street2.....

c. City.....

d. State.....

e. Zip code

B. Dual-Enrollment Courses

Mathematics Questionnaire

Definition: We use the term dual enrollment courses to refer 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 this type?

Yes → If Yes, go to B2.

No → If No, go to B4.

B2. Please complete the following table giving the number of students enrolled in your dual enrollment program (as defined above) for the previous term (spring 2015) and the current fall term of 2015.

Course	Total Dual Enrollments	
	Last Term= Spring 2015	This Term= Fall 2015
a. College Algebra.....		
b. Pre-calculus		
c. Calculus I		
d. Statistics.....		
e. Other		

B3. Are the high school instructors of the dual enrollment courses reported in B2 required to participate in a teaching evaluation program conducted by your institution?

Yes

No

B. Dual-Enrollment Courses (cont.)

Mathematics Questionnaire

- B4. 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 → If Yes, go to B5.

No → If No, go to B6.

- B5. In fall 2015, 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)?

Number of students.....

- B6. Does your institution participate in a program that allows high school students to enroll in mathematical sciences courses on your campus for high school credit and, simultaneously, college credit?

Yes

No

*In subsequent sections we ask about course enrollments in your department; please **do not** include any of the enrollments reported in this Section B.*

C. Distance Learning

Mathematics Questionnaire

Definition: Distance learning courses are those courses offered by your institution for credit, in which the majority of the instruction occurs with the instructor and the students separated by time and /or place (e.g. courses in which the majority of the course is taught online, or by computer software, or by other technologies) including MOOCs that are offered for credit. (A MOOC is a “massive open online course.”)

C1. Does your institution give (transfer) credit for any distance learning courses in the mathematical sciences that are not taught by faculty in your institution?

Yes

No

C2. Does your institution have a limit on the number of credits earned (or courses taken) in distance learning classes that may be counted toward graduation?

Yes

No

C3. Has your department taught any distance learning course within the calendar years 2013-2015?

Yes If Yes, go to C4.

No If No, skip to section D.

C4. Which best characterizes the format/structure of the majority of your distance learning courses? (Choose one response.)

Completely online: Instruction takes place completely online

Blended/Hybrid: Instruction takes place in a combination of face-to-face and online formats

Other.....

C5. Which one response best describes the general pattern for how the instructional materials used in your distance learning courses are determined? (Choose one response.)

Course instructors create materials.....

Course instructors choose commercially produced materials.....

Course instructors choose a combination of both.....

C. Distance Learning (cont.)

Mathematics Questionnaire

C6. In most of your distance learning courses, how are the majority of the tests administered?
(Choose one response.)

- Not monitored
- Online, but using some kind of monitoring technology
- At a monitored testing site.....
- Combination of both.....

C7. Are there any courses that you offer in both non-distance learning and in distance learning formats?

- Yes → If Yes, go to C8 below.
- No → If No, go to C10.

C8. Do the course instructors in your distance learning courses generally:

	Yes	No
a. Hold office hours to meet with students on campus as in comparable non-distance learning courses taught on campus? ...	<input type="checkbox"/>	<input type="checkbox"/>
b. Participate in evaluation of instruction in the same way as faculty who teach comparable non-distance learning courses?	<input type="checkbox"/>	<input type="checkbox"/>

C9. Which, if any, of the following practices apply to the majority of distance learning courses in your department? (Check one response on each line.)

	Yes	No
a. Same use of common examinations (if any) as in the non-distance-learning course.....	<input type="checkbox"/>	<input type="checkbox"/>
b. Same common course as in the non-distance-learning course	<input type="checkbox"/>	<input type="checkbox"/>
c. Same course projects as in the non-distance-learning course	<input type="checkbox"/>	<input type="checkbox"/>
d. More course projects than in non-distance-learning course	<input type="checkbox"/>	<input type="checkbox"/>

C10. In the three calendar years 2013-2015 has your department taught any course (for credit) that could be characterized as a MOOC?

- Yes → go to C11 below.
- No → go to Section D.

C. Distance Learning (cont.)

Mathematics Questionnaire

C11. In which of the following content areas has your department taught a MOOC (for credit) during 2013-2015? (Check all that apply.)

- Developmental Mathematics
- College-Level Mathematics below Calculus
- Calculus
- Intermediate Level (e.g. Linear Algebra, Differential Equations)
- Advanced Level
- Teacher Preparation
- Statistics
- Other (specify) _____

C12. What is the total number of students enrolled in MOOCs offered by your department (for credit) in Fall 2015?

D. Faculty Profile (Fall 2015)

Mathematics Questionnaire

Please indicate whether the following types of faculty are actively teaching one or more courses in fall 2015.

Definitions

- **Full-time faculty.** Faculty who are full-time employees in the institution and more than half-time in the department. For example, if a tenured physics professor with a joint appointment in your department teaches a total of two courses in fall 2015, with exactly one being in your department (i.e., mathematics is 50% of the fall teaching assignment), then that person would be counted as part-time in your department.
- **Permanent faculty.** If your institution does not recognize tenure, please report full-time departmental faculty who are permanent on line D1a and report all other faculty on the remaining lines as appropriate.
- **Other full-time faculty.** Full-time faculty who are not tenured or tenure-eligible, faculty with renewable positions, postdoctoral faculty, and visiting faculty.

Faculty Type	Teach in Fall 2015	
	Yes	No
D1. Full-time faculty		
a. Tenured or tenure-eligible, or permanent (if your institution does not recognize tenure) faculty	<input type="checkbox"/>	<input type="checkbox"/>
b. Other full-time faculty	<input type="checkbox"/>	<input type="checkbox"/>
D2. Part-time faculty	<input type="checkbox"/>	<input type="checkbox"/>
D3. Graduate teaching assistant(s) who teach courses independently (not counting the teaching of recitation sessions)	<input type="checkbox"/>	<input type="checkbox"/>

E. Mathematics Courses (Fall 2015)

Mathematics Questionnaire

In the next several pages you will enter data about courses your department is teaching. For each course that is taught, you will be asked to enter the fall 2015 enrollment and the number of sections of the course. Depending upon the type of course, you will be asked about distance learning enrollment and the numbers of each kind of faculty (tenure eligible, part time, etc.) who are teaching the course. Also, you may not teach some of your advanced courses in every term; for those courses we also ask whether the course was offered in spring 2015 or will be offered in spring 2016 (please combine the winter and spring terms if your institution uses the quarter system); please answer these questions regardless of whether you offer the courses in fall 2015.

The following instructions apply throughout Sections E, F, and G (pages 8-23).

- Report distance learning enrollments separately from other enrollments. Distance learning courses are those courses offered by your institution for credit, in which the majority of the instruction occurs with the instructor and the students separated by time and /or place (e.g. courses in which the majority of the course is taught online, or by computer software, or by other technologies), including MOOCs that are offered for credit. (a MOOC is a "massive open online course").
- 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 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 Calculus and Introductory Statistics classes, you will be asked to list separately classes taught in a large lecture format (with recitation/problem/laboratory sections) and, sections that meet as a class with an instructor at a regularly scheduled time (and are not divided into recitation sections). For example, for Mainstream Calculus I, you will be asked for both the number of large lecture courses (E12-1 column (c)) and the total number of recitation sections for all the large lectures (E12-2 column (c)). There are other formats for handling large classes, but please treat any large class that is broken up into smaller units as a "lecture/recitation" class (even if there is no lecture); if neither the lecture/recitation or individual class format seems an appropriate description of the enrollment, enter the enrollment under "other".
- For all courses except as marked in E12, E13, E14, E15, F1, and F2, please do not treat recitation sessions as separate sections. Instead, please treat both the lecture component and any associated recitation sessions as a single section.
- 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 (d) and sections taught by other full-time faculty in column (e). If your institution does recognize tenure but has faculty with renewable contracts, report these faculty as other full-time faculty (column e)
- Full-time faculty teaching in your department and holding joint appointments with other departments should be counted in column (d) if they are tenured, tenure-eligible, or permanent (if your institution does not recognize tenure) in your department. Faculty who are not tenured, tenure-eligible, or permanent in your department should be counted in column (f) if their fall 2015 teaching in your department is less than or equal to 50% of their total fall teaching assignment, and they should be reported in column (e) otherwise. (Example: If a tenured physics professor with a joint appointment in your department teaches a total of two courses in fall 2015, with exactly one being in your department and hence mathematics comprised 50% of the fall teaching assignment, then that person would be counted as part-time in your department.)
- Do not fill in any shaded boxes.
- Any unshaded box that is left blank will be interpreted as reporting a count of zero.
- Except where specifically stated to the contrary, the tables in Sections E, F, and G deal with enrollments in fall term 2015.
- If a section is co-taught by multiple faculty, categorize the section in terms of the most senior faculty member teaching that course.

E. Mathematics Courses (Fall 2015) (cont.)

◆ **Cells left blank will be interpreted as zeros.**

Name of Course (or equivalent)	Total distance education enrollments ¹ (a)	Total enrollment NOT in distance education and NOT dual enrollments ² (b)	Number of sections of courses corresponding to column (b) (c)
MATHEMATICS			
PRECOLLEGE LEVEL			
E1. Precollege level (e.g., arithmetic, pre-algebra, elementary algebra, intermediate algebra)			
INTRODUCTORY LEVEL, INCLUDING PRE-CALCULUS			
E2. Mathematics for Liberal Arts			
E3. Finite Mathematics			
E4. Business Mathematics (non- Calculus)			

¹ Students receive the majority of their instruction online, or by computer software, or other technology where the instructor is NOT physically present (including MOOCs offered for credit)

² Do not include any dual enrollment 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.

E. Mathematics Courses (Fall 2015) (cont.)

Mathematics Questionnaire

◆ *Cells left blank will be interpreted as zeros.*

Name of Course (or equivalent)	Total distance education enrollments ¹ (a)	Total enrollment NOT in distance education and NOT dual enrollments ² (b)	Number of sections corresponding to column (b) (c)
MATHEMATICS			
INTRODUCTORY LEVEL, INCLUDING PRE-CALCULUS, CONT.			
E5. Mathematics for pre-service K-8 School Teachers (all courses)			
E6. College Algebra (not included in the Precollege E1 above)			
E7. Trigonometry			
E8. College Algebra & Trigonometry (combined)			
E9. Elementary Functions, Pre- calculus, Analytic Geometry			
E10. Introduction to Mathematical Modeling			
E11. All other introductory-level non- Calculus courses			

¹ Students receive the majority of their instruction online, or by computer software, or by other technology where the instructor is NOT physically present, including MOOCs that are offered for credit.

² Do not include any dual enrollment 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.

E. Mathematics Courses (Fall 2015) (cont.)

Mathematics Questionnaire

◆ Cells left blank will be interpreted as zeros.

Name of Course (or equivalent)	Total distance education enrollments ¹ (a)	Total enrollment NOT in distance education and NOT dual enrollments ² (b)	Number of sections corresponding to column (b) (c)	Of the number in column (c), how many sections are taught by:			
				Tenured or Tenure-eligible Faculty (d)	Other Full-time Faculty (e)	Part-time Faculty (f)	Graduate Teaching Assistants ⁴ (g)
MATHEMATICS							
MAINSTREAM⁵ CALCULUS I							
E12-1. Lecture with separately scheduled recitation/problem/laboratory sessions ⁶							
E12-2. Number of recitation/problem/laboratory sessions associated with courses reported in E12-1. See example ⁷ below.							
E12-3. Individual sections, not in E12-1, that meet as a class with an instructor at a regularly scheduled							
E12-4. Other sections, not listed above							
MAINSTREAM⁵ CALCULUS II							
E13-1. Lecture with separately scheduled recitation/problem/laboratory sessions ⁶							
E13-2. Number of recitation/problem/ laboratory sessions associated with courses reported in E13-1. See example ⁷ below.							
E13-3. Sections not in E13-1, that meet as a class with an instructor at a regularly scheduled time							
E13-4. Other sections not listed above							

¹ Students receive the majority of their instruction online, or by computer software, or by other technology where the instructor is NOT physically present, including MOOCs that are offered for credit.

² Do not include any dual enrollment 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.

³ Count faculty with joint appointments in column (d) if more than 50 percent of their fall 2015 teaching assignments are within your department, and in column (f) otherwise.

⁴ Sections taught independently by GTAs.

⁵ A calculus course is mainstream if it leads to the usual upper division mathematical sciences courses.

⁶ Report a calculus class along with its recitation/problem/laboratory sessions as one section in column (c) of E12-1, E13-1, E14-1, and E15-1.

⁷ Example: suppose your department offers four 100-student sections of a course and that each is divided into five 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.

E. Mathematics Courses (Fall 2015) (cont.)

Mathematics Questionnaire

◆ Cells left blank will be interpreted as zeros.

Name of Course (or equivalent)	Total distance education enrollments ¹ (a)	Total enrollment NOT in distance education and NOT dual enrollments ² (b)	Number of sections corresponding to column (b) (c)	Of the number in column (c), how many sections are taught by:		
				Tenured or Tenure-eligible Faculty (d)	Other Full-time Faculty (e)	Part-time Faculty (f)
MATHEMATICS						
MAINSTREAM⁵ CALCULUS III (and IV, etc.)						
E14-1. Lecture with separately scheduled recitation/problem/laboratory sessions ⁶						
E14-2. Number of recitation/problem/laboratory sessions associated with courses reported in E14-1. See example ⁷ below.						
E14-3. Individual sections not in E14-1, that meet as a class with an instructor at a regularly scheduled time						
E14-4. Other sections not listed above						
NON-MAINSTREAM⁵ CALCULUS I						
E15-1. Lecture with separately scheduled recitation/problem/laboratory sessions ⁶						
E15-2. Number of recitation/problem/laboratory sessions associated with courses reported in E15-1. See example ⁷ below.						
E15-3. Individual sections not in E15-1 that meet as a class with an instructor at a regularly scheduled						
E15-4. Other sections not listed above						

¹ Students receive the majority of their instruction online, or by computer software, or by other technology where the instructor is NOT physically present, including MOOCs that are offered for credit.
² Do not include any dual enrollment 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.
³ Count faculty with joint appointments in column (d) if more than 50 percent of their fall 2015 teaching assignments are within your department, and in column (f) otherwise.
⁴ Sections taught independently by GTAs.
⁵ A calculus course is mainstream if it leads to the usual upper division mathematical sciences courses.
⁶ Report a calculus class along with its recitation/problem/laboratory sessions as one section in column (c) of E12-1, E13-1, E14-1, and E15-1.
⁷ Example: suppose your department offers four 100-student sections of a course and that each is divided into five 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.

E. Mathematics Courses (Fall 2015) (cont.)

Mathematics Questionnaire

◆ Cells left blank will be interpreted as zeros.

Name of Course (or equivalent)	Total distance education enrollments ¹ (a)	Total enrollment NOT in distance education and NOT dual enrollments ² (b)	Number of sections corresponding to column (b) (c)	Of the number in column (c), how many sections are taught by:			
				Full-time Faculty ³			
				Tenured or Tenure-eligible Faculty (d)	Other Full-time Faculty (e)	Part-time Faculty (f)	
Graduate Teaching Assistants (g)							
MATHEMATICS							
CALCULUS LEVEL, CONT.							
E16. Non-mainstream ⁵ Calculus I, II, III, etc.							
E17. Differential Equations and Linear Algebra (combined)							
E18. Differential Equations							
E19. Linear Algebra or Matrix Theory							
E20. Discrete Mathematics (not Discrete Structures, which is E29)							
E21. Freshman seminar (Only count courses that are not included elsewhere)							
E22. Other calculus-level courses							

¹ Students receive the majority of their instruction online, or by computer software, or by other technology where the instructor is NOT physically present, including MOOCs that are offered for credit.

² Do not include any dual enrollment 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.

³ Count faculty with joint appointments in column (d) if more than 50 percent of their fall 2015 teaching assignments are within your department, and in column (f) otherwise.

⁴ Sections taught independently by GTAs.

⁵ A calculus course is mainstream if it leads to the usual upper division mathematical sciences courses.

E. Mathematics Courses (Fall 2015) (cont.)

Mathematics Questionnaire

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 (a).
- If your institution does not recognize tenure, report sections taught by your permanent faculty in column (c).
- Make sure that no course is reported in more than one row.
- Respond to columns (d) and (e) for every course, even if the course is not offered in fall 2015.

◆ **Cells left blank will be interpreted as zeros.**

Name of Course (or equivalent)	Total enrollment fall 2015 (a)	Number of sections corresponding to column (a) (b)	Number of sections corresponding to taught by Tenured or Tenure-eligible Faculty (c)	Whether or not the course was offered in fall 2015:		Will this course be offered in the next term (spring 2016)? (e)	
				Yes	No	Yes	No
MATHEMATICS							
ADVANCED UNDERGRADUATE LEVEL							
E23. Introduction to Proofs				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E24-1. Modern Algebra I				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E24-2. Modern Algebra II				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E25. Number Theory				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E26. Combinatorics				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E27. Actuarial Mathematics				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E28. Logic/Foundations (not E23)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E29. Discrete Structures (beyond Discrete Mathematics, which is E20)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E30. History of Mathematics				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E31. Geometry				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E. Mathematics Courses (Fall 2015) (cont.)

◆ Cells left blank will be interpreted as zeros.

Name of Course (or equivalent)	Total enrollment fall 2015 (a)	Number of sections corresponding to column (b)	Number of sections taught by Tenured or Tenure-eligible Faculty (c)	Whether or not the course was offered in fall 2015:		Will this course be offered in the next term (spring 2016)? (e)	
				Was this course taught in ANY term of the previous academic year? (d)			
				Yes	No	Yes	No
MATHEMATICS							
ADVANCED UNDERGRADUATE LEVEL, CONT.							
E32-1. Advanced Calculus I and/or Real Analysis I				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E32-2. Advanced Calculus II and/or Real Analysis II				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E33. Advanced Mathematics for Engineering and Physical Sciences (all courses)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E34. Advanced Linear Algebra (beyond Differential Equations and Linear Algebra (combined) and Linear Algebra or Matrix Theory E17, E19)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E35. Vector Analysis				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E36. Advanced Differential Equations (beyond Differential Equations E18)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E37. Partial Differential Equations				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E38. Numerical Analysis I and II				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E39. Applied Mathematics (Modeling)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E. Mathematics Courses (Fall 2015) (cont.)

◆ Cells left blank will be interpreted as zeros.

Name of Course (or equivalent)	Total enrollment fall 2015 (a)	Number of sections corresponding to column (a) (b)	Number of sections corresponding to column (b) taught by Tenured or Tenure-eligible Faculty (c)	Whether or not the course was offered in fall 2015:		Will this course be offered in the next term (spring 2016)? (e)
				Yes	No	
MATHEMATICS						
ADVANCED UNDERGRADUATE LEVEL, CONT.						
E40. Complex Variables				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E41. Topology				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E42. Mathematics of Finance (not Academic Mathematics E27, or Applied Mathematics Modeling E39)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E43. Codes and Cryptology				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E44. Biomathematics				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E45. Operations Research (all courses)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E46. Senior Seminar/ Independent Study in Mathematics				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E47. All other advanced level mathematics (excluding Math for Secondary School Teachers, Probability or Statistics courses)						
E48. Mathematics for Secondary School Teachers (all such courses not counted above)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E. Mathematics Courses (Fall 2015) (cont.)

Mathematics Questionnaire

Definition: Distance learning courses are those courses offered by your institution for credit, in which the majority of the instruction occurs with the instructor and the students separated by time and /or place (e.g. courses in which the majority of the course is taught online, or by computer software, or by other technologies), including MOOCs that are offered for credit. (A MOOC is a “massive open online course”).

E49. Do you offer any advanced undergraduate mathematics courses (E23-E48) as distance learning courses?

Yes → If Yes, go to E50 below.

No → If No, go to Section F.

E50. Please indicate which advanced undergraduate mathematics courses you offer as distance learning courses. (Check all that apply.)

Course	Offer as distance learning
E23. Introduction to Proofs	<input type="checkbox"/>
E24-1. Modern Algebra I	<input type="checkbox"/>
E24-2. Modern Algebra II	<input type="checkbox"/>
E25. Number Theory	<input type="checkbox"/>
E26. Combinatorics	<input type="checkbox"/>
E27. Actuarial Mathematics	<input type="checkbox"/>
E28. Logic/Foundations (not E23)	<input type="checkbox"/>
E29. Discrete Structures.(beyond E20)	<input type="checkbox"/>
E30. History of Mathematics	<input type="checkbox"/>
E31. Geometry	<input type="checkbox"/>
E32-1. Advanced Calculus I and/or Real Analysis I	<input type="checkbox"/>
E32-2. Advanced Calculus II and/or Real Analysis I	<input type="checkbox"/>
E33. Advanced Mathematics for Engineering and Physical Sciences (all courses) .	<input type="checkbox"/>
E34. Advanced Linear Algebra (beyond E17, E19)	<input type="checkbox"/>
E35. Vector Analysis	<input type="checkbox"/>
E36. Advanced Differential Equations (beyond E18)	<input type="checkbox"/>
E37. Partial Differential Equations	<input type="checkbox"/>
E38. Numerical Analysis I and II	<input type="checkbox"/>
E39. Applied Mathematics (Modeling)	<input type="checkbox"/>
E40. Complex Variables	<input type="checkbox"/>
E41. Topology	<input type="checkbox"/>
E42. Mathematics of Finance (not E27, E39)	<input type="checkbox"/>
E43. Codes and Cryptology	<input type="checkbox"/>
E44. Biomathematics	<input type="checkbox"/>
E45. Operations Research (all courses)	<input type="checkbox"/>
E46. Senior Seminar/ Independent Study in Mathematics	<input type="checkbox"/>
E47. Other advanced level mathematics (excluding Math for Secondary School Teachers, Probability or Statistics courses)	<input type="checkbox"/>
E48. Mathematics for Secondary School Teachers (all such courses not counted above)	<input type="checkbox"/>

F. Probability and Statistics Courses (Fall 2015)

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

Yes → If Yes, go to F1 below.
 No → If No, go to Section G.

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

◆ Cells left blank will be interpreted as zeros.

Name of Course (or equivalent)	Total distance education enrollments ¹ (a)	Total enrollment NOT in distance education and NOT dual enrollments ² (b)	Number of sections corresponding to column (b) (c)	Of the number in column (c), how many sections are taught by:		
				Tenured or Tenure-eligible Faculty (d)	Other Full-time Faculty (e)	Part-time Faculty (f)
STATISTICS						
INTRODUCTORY LEVEL						
Introductory Statistics (no calculus prerequisite)						
F1-1. Lecture with separately scheduled recitation/problem/laboratory sessions ⁵						
F1-2. Number of recitation/problem/ laboratory sessions associated with courses reported in F1-1 ⁶						
F1-3. Individual sections not in F1-1, that meet as a class with an instructor at a regularly scheduled time Other sections						
F1-4. Other sections not listed above						

¹ Students receive the majority of their instruction online, or by computer software, or by other technology where the instructor is NOT physically present, including MOOCs that are offered for credit.

² Do not include any dual enrollment 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.

³ Count faculty with joint appointments in column (d) or (e) if more than 50 percent of their fall 2015 teaching assignments are within your department, and in column (f) otherwise.

⁴ Sections taught independently by GTAs.

⁵ Report an introductory statistics class along with its recitation/problem/laboratory sessions as one section in column (c) of F1 and F-2.

⁶ Example: suppose your department offers four 100-student sections of a course and that each is divided into five-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.

F. Probability and Statistics Courses (Fall 2015) (cont.)

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

◆ Cells left blank will be interpreted as zeros.

Name of Course (or equivalent)	Total distance education enrollments ¹ (a)	Total enrollment NOT in distance education and NOT dual enrollments ² (b)	Number of sections corresponding to column (b) (c)	Of the number in column (c), how many sections are taught by:		
				Tenured or Tenure-eligible (d)	Other Full-time Faculty ³ (e)	Part-time Faculty (f)
STATISTICS						
INTRODUCTORY LEVEL						
Introductory Statistics (calculus prerequisite) (for non-majors)						
F2-1. Lecture with separately scheduled recitation/problem/laboratory sessions ⁵						
F2-2. Number of recitation/problem/ laboratory sessions associated with courses reported in F2-1 ⁶						
F2-3. Individual sections not in F2-1, that meet as a class with an instructor at a regularly scheduled time						
F2-4. Sections not listed above						
Other Introductory Statistics Courses						
F3. Statistics for pre-service elementary and/or middle grade teachers						
F4. Statistics for pre-service secondary school teachers						
F5. Other introductory level Probability or Statistics courses for non-majors/minors						

¹ Students receive the majority of their instruction online, or by computer software, or by other technology where the instructor is NOT physically present, including MOOCs that are offered for credit.

² Do not include any dual enrollment 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.

³ Count faculty with joint appointments in column (d) or (e) if more than 50 percent of their fall 2015 teaching assignments are within your department, and in column (f) otherwise.

⁴ Sections taught independently by GTAs.

⁵ Report an introductory statistics class along with its recitation/problem/laboratory sessions as one section in column (c) of F1 and F-2.

⁶ Example: suppose your department offers four 100-student sections of a course and that each is divided into five-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.

F. Probability and Statistics Courses (Fall 2015) (cont.)

Mathematics Questionnaire

♦ Cells left blank will be interpreted as zeros.

Name of Course (or equivalent)	Total enrollment fall 2015 (a)	Number of sections corresponding to column (a) (b)	Number of sections corresponding to column (b) taught by Tenured, Tenure-eligible, or Permanent Faculty (c)	Was this course taught in ANY term of the previous academic year? (d)		Will this course be offered in the next term (spring 2016)? (e)	
				Yes	No	Yes	No
PROBABILITY & STATISTICS							
INTERMEDIATE AND ADVANCED LEVEL							
F6. Introductory Probability and/or Statistics for majors/minors (no calculus prerequisite)							
F7. Combined Probability & Statistics (calculus prerequisite)							
F8. Probability (calculus prerequisite)							
F9. Mathematical Statistics (calculus prerequisite)							
F10. Stochastic Processes							
F11. Applied Statistical Analysis							
F12. Data Science/Analytics							
F13. Design & Analysis of Experiments							
F14. Regression (and Correlation)							
F15. Biostatistics							
F16. Nonparametric Statistics							
F17. Categorical Data Analysis							
F18. Sample Survey Design & Analysis							
F19. Statistical Software & Computing							
F20. Senior Seminar/Independent Studies							
F21. All other upper level Probability & Statistics							

F. Probability and Statistics Courses (Fall 2015) (cont.)

Mathematics Questionnaire

F22. Do you offer any intermediate/advanced undergraduate courses in statistics (F7-F21) as distance learning courses?

Yes → If Yes, go to F23 below.

No → If No, go to Section G.

F23. Please indicate which advanced undergraduate mathematics courses you offer as distance learning courses. (Check all that apply.)

Course	Offer as distance learning
F6. Introductory Probability and/or Statistics for majors/minors (no calculus prerequisite)	<input type="checkbox"/>
F7. Combined Probability & Statistics (calculus prerequisite)	<input type="checkbox"/>
F8. Probability (calculus prerequisite)	<input type="checkbox"/>
F9. Mathematical Statistics (calculus prerequisite)	<input type="checkbox"/>
F10. Stochastic Processes	<input type="checkbox"/>
F11. Applied Statistical Analysis	<input type="checkbox"/>
F12. Data Science/Analytics.....	<input type="checkbox"/>
F13. Design & Analysis of Experiments	<input type="checkbox"/>
F14. Regression (and Correlation)	<input type="checkbox"/>
F15. Biostatistics	<input type="checkbox"/>
F16. Nonparametric Statistics	<input type="checkbox"/>
F17. Categorical Data Analysis	<input type="checkbox"/>
F18. Sample Survey Design & Analysis	<input type="checkbox"/>
F19. Statistical Software & Computing	<input type="checkbox"/>
F20. Senior Seminar/ Independent Studies	<input type="checkbox"/>
F21. Other upper level Probability and/or Statistics	<input type="checkbox"/>

G. Computer Science Courses (Fall 2015)

G. Does your department offer any Computer Science courses?

Yes..... → If Yes, go to G1 below.
 No → If No, go to Section J.

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

In December 2013, a joint IEEE Computer Society/ACM Task Force issued its recommendations on “Computer Science Curricula 2013. That report, which listed 18 Knowledge Areas, is available by clicking <http://www.acm.org/education/CS2013-final-report.pdf>

- Course titles that match Knowledge Areas are indicated below

◆ Cells left blank will be interpreted as zeros.

Name of Course (or equivalent)	Total distance education enrollments ¹ (a)	Total enrollment NOT in distance education and NOT dual enrollments ² (b)	Number of sections corresponding to column (b) (c)	Of the number in column (c), how many sections are taught by:				
				Tenured or Tenure-eligible Faculty (d)	Other Full-time Faculty (e)	Part-time Faculty (f)	Graduate Teaching Assistants ³ (g)	
COMPUTER SCIENCE								
GENERAL EDUCATION COURSES								
G1. Computers and Society, Issues in CS								
G2. Intro. to Software Packages								
G3. Other CS General Education Courses								

¹ Students receive the majority of their instruction online, or by computer software, or by other technology where the instructor is NOT physically present, including MOOCs that are offered for credit.

² Do not include any dual enrollments (see Section B).

³ Sections taught independently by GTAs.

G. Computer Science Courses (Fall 2015) (cont.)

Mathematics Questionnaire

◆ Cells left blank will be interpreted as zeros.

Name of Course (or equivalent)	Total distance education enrollments ¹ (a)	Total enrollment NOT in distance education and NOT dual enrollments ² (b)	Number of sections corres- ponding to column (b) (c)	Of the number in column (c), how many sections are taught by:			
				Tenured or Tenure- eligible Faculty (d)	Other Full- time Faculty (e)	Part- time Faculty (f)	Graduate Teaching Assistants ³ (g)
COMPUTER SCIENCE							
INTRODUCTORY CS COURSES							
G4. Computer Programming I							
G5. Computer Programming II							
G6. Discrete Structures DS) ⁴ , but not math courses E20 or E29 in Section E above							
G7. All other introductory level CS courses							
INTERMEDIATE LEVEL							
G8. Algorithms and Complexity (AL) ⁴							
G9. Architecture and Organization (AR) ⁴							
G10. Operating Systems (OS) ⁴							

¹Students receive the majority of their instruction online, or by computer software, or by other technology where the instructor is NOT physically present, including MOOCs that are offered for credit.

²Do not include any dual enrollments (see Section B).

³Sections taught independently by GTAs.

⁴Knowledge areas from Computer Science Curricula 2013

G. Computer Science Courses (Fall 2015) (cont.)

Mathematics Questionnaire

◆ Cells left blank will be interpreted as zeros.

Name of Course (or equivalent)	Total distance education enrollments ¹ (a)	Total enrollment NOT in distance education and NOT dual enrollments ² (b)	Number of sections corresponding to column (b) (c)	Of the number in column (c), how many sections are taught by:				
				Tenured or Tenure- eligible Faculty (d)	Other Full- time Faculty (e)	Part- time Faculty (f)	Graduate Teaching Assistants ³ (g)	
COMPUTER SCIENCE								
INTERMEDIATE LEVEL CONT.								
G11. Networking and Communication (NC) ⁴								
G12. Programming Languages (PL) ⁴								
G13. Human-Computer Interaction (HCI) ⁴								
G14. Intelligent Systems (IS) ⁴								
G15. Information Management (IM) ⁴								
G16. Social Issues and Professional Practice (SP) ⁴								
G17. Software Development Fundamentals (SDF) ⁴								
G18. Computational Science (CN) ⁴								
UPPER LEVEL								
G19. Graphics and Visualization (GV) ⁴								
G20: Information Assurance and Security (IAS) ⁴								
G21: Parallel and Distributed Computing (PD) ⁴								
G22. All other intermediate or advanced level CS Courses (including knowledge areas PBD, SE, SF) ⁴								

¹ Students receive the majority of their instruction online, or by computer software, or by other technology where the instructor is NOT physically present, including MOOCs that are offered for credit.

² Do not include any dual enrollments (see Section B).

³ Sections taught independently by GTAs.

⁴ Knowledge areas from Computer Science Curricula 2013

H. Introductory Statistics Instruction

Mathematics Questionnaire

Introductory Statistics Instruction (taught within the mathematics department):

H1. Does your department offer an introductory statistics course for non-majors that has no calculus prerequisite?

Yes..... → If Yes, continue with H2.

No → If No, go to Section I.

H2. How many different kinds of introductory statistics courses for non-majors that have no calculus prerequisite does your department offer? (e.g. statistics for social scientists, for life scientists, etc.)

1

2

3

More than 3

The following questions are about instruction in course F1: Introductory Statistics (no calculus prerequisite) on page 18. If you offer more than one such course, choose the course that is aimed at the most general audience.

H3. In most sections of your introductory statistics course (as reported in course F1) the percentage of class sessions in which real data are used is generally approximately:

0-20%.....

21-40%

41-60%

61-80%

81-100%.....

H4. In most sections of your introductory statistics course (as reported in course F1) the percentage of class sessions in which in-class demonstrations and/or in-class problem solving activities/discussions generally take place is approximately:

0-20%.....

21-40%

41-60%

61-80%

81-100%.....

H. Introductory Statistics Instruction (cont.)

Mathematics Questionnaire

H5. Which, if any, of the following kinds of technology are used in a majority of the sections of your introductory statistics course (as reported in course F1)? (Check one on each line.)

	Yes	No
a. Graphing calculators	<input type="checkbox"/>	<input type="checkbox"/>
b. Statistical packages (e.g., R, JMP, SAS, SPSS, Minitab)	<input type="checkbox"/>	<input type="checkbox"/>
c. Educational software (e.g. software linked to the textbook)	<input type="checkbox"/>	<input type="checkbox"/>
d. Applets	<input type="checkbox"/>	<input type="checkbox"/>
e. Spreadsheets (e.g. Excel, GoogleDocs, Access)	<input type="checkbox"/>	<input type="checkbox"/>
f. Web-based resources including data sources or data analysis	<input type="checkbox"/>	<input type="checkbox"/>
g. Classroom response systems (e.g., clickers)	<input type="checkbox"/>	<input type="checkbox"/>
h. Online textbooks	<input type="checkbox"/>	<input type="checkbox"/>
i. Online videos	<input type="checkbox"/>	<input type="checkbox"/>

H6. Do most sections of the introductory statistics course (as reported in course F1) require assessments beyond homework, exams, and quizzes (assessments such as projects, oral presentations, written reports)?

Yes

No

H7: Which, if any, of the following topics are covered in the course (as reported in course F1)? (Check all that apply)

	Yes	No
a. Conditional probability.....	<input type="checkbox"/>	<input type="checkbox"/>
b. Simulation to explore randomness.....	<input type="checkbox"/>	<input type="checkbox"/>
c. Resampling techniques (e.g. bootstrapping, randomization tests)	<input type="checkbox"/>	<input type="checkbox"/>

H8. The instructors teaching introductory statistics course F1 typically have received the following highest degree in statistics: (Check one)

a. No graduate degree in statistics.....

b. A Masters' degree in statistics

c. A Ph.D. degree in statistics

H9. Are there other introductory statistics courses at your institution, offered by departments outside of the mathematical sciences?

Yes If Yes, go to H10

No If No, go to Section I.

H10. Enter the Fall 2015 total enrollment in all such introductory courses, offered outside of the mathematical sciences, at your institution. _____

I. Undergraduate Program (Fall 2015)

Mathematics Questionnaire

If you do not offer a major in a mathematical science, check here and go to I5. Otherwise go to I1.

- I1. Report the total number of your departmental majors who received their bachelor's degrees in the mathematical sciences or computer sciences between July 1, 2014 and June 30, 2015. Include joint majors and double majors¹
- I2. Of the undergraduate degrees described in I1, 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 the Other category for a major in your department who does not fit into one of the earlier categories.

Area of Major	Male	Female
a. Mathematics (including applied)		
b. Mathematics Education		
c. Statistics		
d. Computer Science		
e. Actuarial Mathematics		
f. Joint 1 Mathematics Majors		
g. Other mathematics majors		

¹ A "double major" is a student who completes the degree requirements of two separate majors, one in mathematics and one 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 separate majors.

I. Undergraduate Program (Fall 2015) (cont.)

Mathematics Questionnaire

I3. To what extent must majors in your department complete the following? Check one box in each row.

	Required of all majors	Required of some but not all majors	Not required of any major
a. Modern Algebra I.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Real Analysis I.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Modern Algebra I or Real Analysis I (majors may choose either to fulfill this requirement)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. A one-year upper level sequence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. .At least one computer science course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. At least one statistics course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. At least one applied mathematics course beyond course E21 (in Section E)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. A capstone experience (e.g., a senior project, a senior thesis, a senior seminar, or an internship)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. An exit exam (written or oral)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I4. Give your best estimate of the percentage of your department's graduating majors from the previous academic year 2014-15 (reported in I1) in each of the following categories. Please make the totals add to 100 percent.

a. Who went into pre-college teaching	%
b. Who went to graduate school in the mathematical sciences	%
c. Who went to professional school or to graduate school outside of the mathematical sciences.....	%
d. Who took jobs in business, industry, government, etc.....	%
e. Who had other post-graduation plans known to the department	%
f. Whose plans are not known to the department	%

I. Undergraduate Program (Fall 2015) (cont.)

Mathematics Questionnaire

15. Many departments today use a spectrum of program-assessment methods. Please indicate whether each of the following apply to your department's undergraduate program-assessment efforts during the last six years.

	Yes	No
a. We conducted a review of our undergraduate program that included one or more reviewers from outside of our institution.....	<input type="checkbox"/>	<input type="checkbox"/>
b. We asked graduates of our undergraduate program to comment on and suggest changes in our undergraduate program.....	<input type="checkbox"/>	<input type="checkbox"/>
c. Other departments at our institution were invited to comment on the preparation that their students received in our courses.....	<input type="checkbox"/>	<input type="checkbox"/>
d. Data on our students' progress in subsequent mathematics courses were gathered and analyzed.....	<input type="checkbox"/>	<input type="checkbox"/>
e. We have assessed student learning objectives in courses required in our major.....	<input type="checkbox"/>	<input type="checkbox"/>
f. We have a placement system for first-year students and we gathered and analyzed data on its effectiveness.....	<input type="checkbox"/>	<input type="checkbox"/>
g. Our department's program assessment activities led to changes in our undergraduate program.....	<input type="checkbox"/>	<input type="checkbox"/>

16. Which of the following are significant sources of information to the department about the types of pedagogy used in instruction in your department? (Check all that apply.)

- a. Syllabi for classes
- b. Teaching portfolios
- c. Peer evaluations of instructors.....
- d. Self-evaluations of instructors
- e. Department discussions of teaching practices
- f. None of these are available go to I10

17. Which of the following pedagogical strategies are used by some member of your department faculty: (Check all that are used.)

- a. Inquiry based class
- b. "Flipped classroom"
- c. Class conducted largely online
- d. Activity based learning.....
- e. Technology used to develop conceptual understanding.....

I. Undergraduate Program (Fall 2015) (cont.)

Mathematics Questionnaire

18. Has your department seen major changes over the last ten years in the kinds of pedagogy used in your department?

Yes Go to I9

No Go to I10

19. Which of the following factors were significant reasons for the changes made to the kinds pedagogy used in your department over the last ten years? (Check all that apply.)

- a. Educational research
- b. Advocacy of some faculty member in our department.....
- c. Advocacy by another department
- d. Advocacy by institution's administrators.....
- e. Advocacy by a professional organization

I. Undergraduate Program (Fall 2015) (cont.)

Mathematics Questionnaire

- I10. For each of the following opportunities, indicate whether or not it is available to your undergraduate mathematical sciences students through your department or institutions.

	Yes	No
a. Honors sections of departmental courses	<input type="checkbox"/>	<input type="checkbox"/>
b. An undergraduate Mathematical Science Club	<input type="checkbox"/>	<input type="checkbox"/>
c. Special mathematics programs to encourage women	<input type="checkbox"/>	<input type="checkbox"/>
d. Special mathematics programs to encourage minorities	<input type="checkbox"/>	<input type="checkbox"/>
e. Opportunities to participate in mathematical science contests.....	<input type="checkbox"/>	<input type="checkbox"/>
f. Special mathematics statistics lectures/colloquia not part of a mathematical science club	<input type="checkbox"/>	<input type="checkbox"/>
g. Mathematical sciences outreach opportunities in local K–12 schools	<input type="checkbox"/>	<input type="checkbox"/>
h. Undergraduate research opportunities in mathematical sciences.....	<input type="checkbox"/>	<input type="checkbox"/>
i. Independent study opportunities in mathematical sciences	<input type="checkbox"/>	<input type="checkbox"/>
j. Assigned faculty advisers in mathematical sciences	<input type="checkbox"/>	<input type="checkbox"/>
k. Opportunity to write a senior thesis in mathematical sciences.....	<input type="checkbox"/>	<input type="checkbox"/>
l. A career day for mathematical sciences majors	<input type="checkbox"/>	<input type="checkbox"/>
m. Special advising about graduate school opportunities in mathematical sciences.....	<input type="checkbox"/>	<input type="checkbox"/>
n. Opportunity for an internship experience.....	<input type="checkbox"/>	<input type="checkbox"/>
o. Opportunity to participate in a senior seminar	<input type="checkbox"/>	<input type="checkbox"/>
p. Opportunity to tutor, grade papers, or TA in the department.....	<input type="checkbox"/>	<input type="checkbox"/>
q. Opportunity to provide mathematical or statistical consulting to client	<input type="checkbox"/>	<input type="checkbox"/>

- I11. Give your best estimate of the number of all of your majors who have participated in each of the following activities over the past year September 1, 2014 – August 31, 2015.

- a. Undergraduate research project in the mathematical sciences _____
- b. Internship in mathematical sciences _____
- c. Mathematical or statistical consulting to client _____

I. Undergraduate Program (Fall 2015) (cont.)

Mathematics Questionnaire

I12. Does your department offer interdisciplinary course(s) in any of the following areas below: (Check all that apply.) An interdisciplinary course is one in which mathematics is taught with relation to another field such as mathematics and economics, or mathematics and education; do not include calculus courses.

- a. Mathematics and finance or business
- b. Mathematics and biology
- c. Mathematics and the study of the environment
- d. Mathematics and engineering or the physical sciences
- e. Mathematics and economics
- f. Mathematics and social sciences other than economics
- g. Mathematics and education
- h. Mathematics and the humanities
- i. Mathematics and computer science
- j. Other

I13a. Does your department offer a minor in statistics?

Yes if yes go to I13b

No if no go to I14

I13b. How many students graduated with a minor in statistics from your department between July 1, 2014 and June 30, 2015? _____

I14. Does your department offer a major in statistics?

Yes if yes go to I15

No if no go to I16

I. Undergraduate Program (Fall 2015) (cont.)

Mathematics Questionnaire

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

	Required of all majors	Required of some but not all majors	Not required of any major
a. Calculus I	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Calculus II.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Multivariable Calculus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Linear Algebra/Matrix Theory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. At least one computer science course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. At least one applied mathematics course (not including a, b, c, d above)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. A capstone experience (e.g., a senior project, a senior thesis, a senior seminar, or an internship)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. An exit exam (written or oral)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. At least one upper level Probability course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. At least one upper-level Mathematical Statistics course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. At least one applied statistics course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. At least one upper-level Linear Models course.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. One Bayesian Inference course.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

116. Does your institution allow a student to meet an institutional or divisional graduation requirement in the mathematical sciences using an Advanced Placement course (taken while the student was in high school)?

Yes

No

I. Undergraduate Program (Fall 2015) (cont.)

Mathematics Questionnaire

I17. Responses to this question will be used to project total enrollment in the current (2015-2016) academic year based on the pattern of your departmental enrollments in 2014-2015. Do NOT include any numbers from dual enrollment courses in answering question I17.

- a. Previous fall (2014) total student enrollment in your department's undergraduate mathematics, statistics, and computer science courses (remember: do not include dual enrollment courses¹)
- b. Previous academic year (2014–2015) total enrollment in your department's undergraduate mathematics, statistics, and computer science courses, excluding dual enrollments and excluding enrollments in summer school 2015
- c. Total enrollment in your department's undergraduate mathematics, statistics, and computer science courses in summer school 2015
- d. Total enrollment in Calculus II in winter/spring term of 2015 (combine the winter and spring terms if using the quarter system)
- e. Total number of sections in Calculus II in winter/spring term of 2015

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.

J. Pre-service Teacher Education in Mathematic (cont.)

Mathematics Questionnaire

Questions regarding the mathematical preparation for middle grades (generally grades 6-8) pre-service teachers of mathematics:

J5. Does your institution have a program of certification for pre-service middle-grade teachers of mathematics (i.e. a program that leads to obtaining credentials to teach mathematics in grades 6-8 in public schools in your state)?

Yes..... → If Yes, go to J6.

No → If No, skip to J8.

J6. How many semester hours of courses in mathematics from your department are required by your institution's program of certification for pre-service middle grades (6-8) teachers of mathematics?

J7. How many semester hours of courses from your department on fundamental ideas of mathematics appropriate for middle grade teachers are required by your institution's program of certification for pre-service middle grades (6-8) teachers of mathematics? _____

Certification requirements for pre-service elementary (generally grades K-5) teachers of mathematics

J8. Does your institution have a program of certification for pre-service elementary teachers of mathematics in grades K-5 (i.e. a program that leads to obtaining credentials to teach mathematics in grades K-5 in public schools in your state)?

Yes..... → If Yes, go to J9.

No → If No, skip to section K.

J9. How many semester hours of courses in mathematics from your department are required by your institution's program of certification for pre-service elementary grades (K-5) teachers of mathematics? _____

J10. How many semester hours of courses from your department on fundamental ideas of mathematics appropriate for elementary teachers are required by your institution's program of certification for prospective elementary grades (K-5) teachers of mathematics? _____

K. Comments and Suggestions

Mathematics Questionnaire

If you found some question(s) difficult to interpret or answer, please let us know. We welcome suggestions to improve future surveys (e.g., CBMS 2020).

Comments: _____

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 2017, will be of use to you and your department.

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