Four-Year Mathematics Questionnaire

SURVEY OF UNDERGRADUATE PROGRAMS IN THE MATHEMATICAL SCIENCES

General Information

As part of a random sample, your department has been chosen to participate in the NSF-funded CBMS2021 National Survey of Undergraduate Mathematical Sciences Programs. 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 fielded six years ago by going to www.ams.org/cbms, where the CBMS 2015 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 855-770-0558 or send an email to cbms2021@westat.com.

Please complete the questionnaire by October 29, 2021 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

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

Definition: We use the term dual (or concurrent) enrollment courses to refer to courses taught in a high school 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 B3.

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 2021) and the current fall term of 2021. (Do not include these enrollments in subsequent sections)

Course	Total Dual Enrollments	
	Last Term = Spring 2021	**This Term = Fall 2021**
a. College Algebra		
b. Precalculus		
c. Calculus I		
d. Statistics		
e. Other		

B3. Does your department assign any of its own full-time or part-time faculty to teach courses in a high school for which high school students may receive both high school and college credit (through your institution)?

Yes..... ☐ ⟶ If Yes, go to B4.

No ..... ☐ ⟶ If No, go to C1.

B4. In fall 2021, how many students are enrolled in the courses taught in a high school 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)? (Include these enrollments in subsequent sections)

Number of students..... ☐

C. Distance/Remote Learning

Definition: Distance/remote learning courses are those courses offered by your institution for credit, in which half or more of the instruction occurs with the instructor and the students separated by time and /or place, and facilitated by technology (e.g., courses in which half or more of the course is taught online either synchronously or asynchronously, or by computer software, or by other technologies). Include only distance/remote learning courses offered in normal practice, not courses that became distance/remote due to the COVID-19 pandemic.

C1. Overall, how have attitudes towards online learning changed as a result of the COVID-19 experience?

		More favorable	No change	Less favorable
a.	Faculty interest in online teaching	☐	☐	☐
b.	Faculty use of online tools	☐	☐	☐
c.	Student interest in online teaching	☐	☐	☐
d.	Student use of online tools	☐	☐	☐

C2. Many colleges have conducted online instruction as a way of addressing the COVID-19 pandemic, offering online instruction either as an alternative to face-to-face instruction or as a supplement to face-to-face instruction. How is that instruction coordinated with what has normally been called distance education? Please indicate which of the following applies to your department for each listed time period, using the following definitions.

- On-campus (face-to-face) learners—students who would be expected to attend most classes in person.
- Remote learners—students who would be expected to attend most classes remotely.

Policy	Prior to pandemic (prior to spring 2020)		During pandemic (spring 2020-summer 2021)		Fall 2021	
	Yes	No	Yes	No	Yes	No
a. We offer some course sections only to on-campus (face-to-face) learners; remote learners might be offered the same course, but the students would not normally be in the same section.	☐	☐	☐	☐	☐	☐
b. We offer some course sections only to remote learners; on-campus (face-to-face) learners might be offered the same course, but the students would not normally be in the same section.	☐	☐	☐	☐	☐	☐
c. We offer some "hybrid" courses to on-campus (face-to-face) learners and remote learners in the same section.	☐	☐	☐	☐	☐	☐

C3. Has your department taught any distance/remote learning course **(other than courses moved online in response to the COVID-19 pandemic)** within the calendar years 2018-2021?

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/remote learning courses (not including courses moved online in response to the COVID-19 pandemic)? (*Choose one response.*)

Sections are taught only online, and only asynchronously. ☐

Sections are taught only online, with an opportunity to meet synchronously online ☐

Sections use a mixture of online and face-to-face sessions ☐

Other ☐

C5. In most of your distance/remote learning courses, how are the majority of the tests administered (not including courses moved online in response to the COVID-19 pandemic? (*Choose one response*.)

Online and not monitored ☐

Online, but using some kind of monitoring technology ☐

At a monitored testing site ☐

Combination of monitoring methods ☐

C6. Rate the following challenges that your department faces when creating and/or offering distance/remote learning mathematics courses. (Please check one box in each line.)

Challenge	Not a challenge	Somewhat of a challenge	Very significant challenge
a. Designing appropriate assessments of student learning.	☐	☐	☐
b. Maintaining academic integrity on assessments.	☐	☐	☐
c. Grade inflation.	☐	☐	☐
d. Building/maintaining community among faculty and students.	☐	☐	☐
e. Maintaining academic quality instruction.	☐	☐	☐
f. Engaging students online.	☐	☐	☐
g. Replicating active learning in a virtual environment.	☐	☐	☐
h. Availability of equipment and technical support for faculty/students.	☐	☐	☐

Please indicate whether the following types of faculty are actively teaching one or more courses in fall 2021.

Definitions

- **Full-time faculty.** Faculty who are full-time employees in the institution and more than halftime 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 2021, 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.

	Faculty Type	Teach in Fall 2021	
		Yes	No
D1.	Full-time faculty who are more than halftime in your department		
	a. Tenured or tenure-eligible, or permanent (if your institution does not recognize tenure) faculty.....	☐	☐
	b. Other full-time faculty (e.g., permanent faculty only if your institution also has tenured or tenure-eligible faculty, faculty with renewable positions such as teaching professionals, postdoctoral faculty, and visiting faculty).....	☐	☐
D2.	Part-time faculty (those who are halftime or less in your department)	☐	☐
D3.	Graduate teaching assistant(s) who teach courses independently (not counting the teaching of recitation sessions)	☐	☐

E. Mathematics Courses (Fall 2021)

Which of the following courses are taught in your department in Fall 2021? You may use different titles for these courses, and may have multiple courses that match a particular course name.

- Enter an X in each applicable box.
- Do **not** include courses taught in other departments, learning centers, or developmental/remedial programs separate from your mathematics program or department.
- Include courses taught through distance/remote education.
- Please also indicate which catalog codes are used to identify those courses. This information will be used to generate a reduced course list suitable for your department so reporting on enrollments will be easier.
- Make sure that no course is reported in more than one row.

Name of Course (or equivalent)	Taught in fall 2021 (a)	Catalog code(s) used for courses offered FALL 2021 (not spring 2022 or previous academic year) (use comma to separate codes) (e)
MATHEMATICS		
PRECOLLEGE LEVEL	Enter X where applicable	
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)	☐	
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. Pre-Calculus	☐	
E10. Introduction to Mathematical Modeling	☐	
E11. Quantitative Literacy/Reasoning	☐	
E12. All other introductory-level non-Calculus courses	☐	

[1]Distance/remote learning courses are those courses offered by your institution for credit, in which half or more of the instruction occurs with the instructor and the students separated by time and /or place, and facilitated by technology (e.g. courses in which the majority of the course is taught online either synchronously or asynchronously, or by computer software, or by other technologies).

Which of the following courses are taught in your department in Fall 2021? You may use different titles for these courses, and may have multiple courses that match a particular course name.

- Enter an X in each applicable box.
- Do **not** include courses taught in other departments, learning centers, or developmental/remedial programs separate from your mathematics program or department.
- Include courses taught through distance/remote education.
- Please also indicate which catalog codes are used to identify those courses. This information will be used to generate a reduced course list suitable for your department so reporting on enrollments will be easier.
- Make sure that no course is reported in more than one row.
- **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). Please treat any large class that is sometimes 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."

Name of Course (or equivalent)	Taught in fall 2021 (a)	Catalog code(s) used for courses offered FALL 2021 (not spring 2022 or previous academic year) (use comma to separate codes)[1] (e)
MAINSTREAM[2] CALCULUS I		
E13-1. Lecture with separately scheduled recitation/problem/laboratory sessions	☐	
E13-2. Individual sections, not in E13-1, that meet as a class with an instructor at a regularly scheduled time	☐	
E13-3. Other sections, not listed above	☐	
MAINSTREAM[2] CALCULUS II		
E14-1. Lecture with separately scheduled recitation/ problem/laboratory sessions	☐	
E14-2. Sections not in E14-1, that meet as a class with an instructor at a regularly scheduled time	☐	
E14-3. Other sections not listed above	☐	
MAINSTREAM[2] CALCULUS III (and **IV,** etc.)		
E15-1. Lecture with separately scheduled recitation/problem/laboratory sessions	☐	
E15-2. Individual sections not in E15-1 that meet as a class with an instructor at a regularly scheduled time	☐	

E15-3. Other sections not listed above	☐	

[1] For E-13 though E-16, enter course identifiers that are sufficiently distinct to separate courses with recitation sessions, courses that meet as a class, and other sections.

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

Name of Course (or equivalent)	Taught in fall 2021 (a)	Catalog code(s) used for courses offered FALL 2021 (not spring 2022 or previous academic year) (use comma to separate codes)[1] (e)
NON-MAINSTREAM[2] CALCULUS		
E16-1. Lecture with separately scheduled recitation/ problem/laboratory sessions[6]	☐	
E16-2. Individual sections not in E16-1 that meet as a class with an instructor at a regularly scheduled time	☐	
E16-3. Other sections not listed above	☐	
E17. Non-mainstream[5] Calculus II, III, etc.	☐	
OTHER CALCULUS LEVEL COURSES		
E18. Differential Equations and Linear Algebra (combined)	☐	
E19. Differential Equations	☐	
E20. Linear Algebra or Matrix Theory	☐	
E21. Discrete Mathematics (not Discrete Structures, which is E30)	☐	
E22. Freshman seminar (Only count courses that are not included elsewhere)	☐	
E23. Other calculus-level courses	☐	

Which of the following courses are taught in your department in Fall 2021, will be taught in Spring 2022, or were taught at any time in 2020-21? You may use different titles for these courses, and may have multiple courses that match a particular course name.

- Enter an X in each applicable box.
- Do **not** include courses taught in other departments, learning centers, or developmental/remedial programs separate from your mathematics program or department.
- Include courses taught through distance/remote education.
- Please also indicate which catalog codes are used to identify those courses. This information will be used to generate a reduced course list suitable for your department so reporting on enrollments will be easier.
- Make sure that no course is reported in more than one row.

Name of Course (or equivalent)	Taught in fall 2021 (a)	Will be taught in spring 2022 (b)	Taught during academic year 2020-21 (c)	Offer as distance/ remote learning course (d)	Catalog code(s) used for courses offered FALL 2021 (not spring 2022 or previous academic year) (use comma to separate codes)[1] (e)
ADVANCED UNDERGRADUATE LEVEL					
E24. Introduction to Proofs	☐	☐	☐	☐	
E25-1. Modern Algebra I	☐	☐	☐	☐	
E25-2. Modern Algebra II	☐	☐	☐	☐	
E26. Number Theory	☐	☐	☐	☐	
E27. Combinatorics	☐	☐	☐	☐	
E28. Actuarial Mathematics	☐	☐	☐	☐	
E29. Logic/Foundations (not E24)	☐	☐	☐	☐	
E30. Discrete Structures (beyond Discrete Mathematics, which is E21	☐	☐	☐	☐	
E31. History of Mathematics	☐	☐	☐	☐	
E32. Geometry	☐	☐	☐	☐	

[1] For E-13 though E-16, enter course identifiers that are sufficiently distinct to separate courses with recitation sessions, courses that meet as a class, and other sections.

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

E. Mathematics Courses (Fall 2021) (cont.)

Name of Course (or equivalent)	Taught in fall 2021 (a)	Will be taught in spring 2022 (b)	Taught during academic year 2020-21 (c)	Offer as distance/ remote learning course (d)	Catalog code(s) used for courses offered FALL 2021 (not for Spring 2022 or previous academic year) (use comma to separate codes) (e)
ADVANCED UNDERGRADUATE LEVEL (cont.)					
E33-1. Advanced Calculus I and/or Real Analysis I	☐	☐	☐	☐	
E33-2. Advanced Calculus II and/or Real Analysis II	☐	☐	☐	☐	
E34. Advanced Mathematics for Engineering and Physical Sciences (all courses)	☐	☐	☐	☐	
E35. Advanced Linear Algebra (beyond Differential Equations and Linear Algebra (combined) and Linear Algebra or Matrix Theory E18, E20)	☐	☐	☐	☐	
E36. Vector Analysis	☐	☐	☐	☐	
E37. Advanced Differential Equations (beyond Differential Equations E19)	☐	☐	☐	☐	
E38. Partial Differential Equations	☐	☐	☐	☐	
E39. Numerical Analysis (all courses)	☐	☐	☐	☐	
E40. Applied Mathematics (Modeling)	☐	☐	☐	☐	
E41. Complex Variables	☐	☐	☐	☐	
E42. Topology	☐	☐	☐	☐	
E43. Mathematics of Finance (not Actuarial Mathematics E28, or Applied Mathematics (Modeling) E40)	☐	☐	☐	☐	
E44. Codes and Cryptography	☐	☐	☐	☐	
E45. Biomathematics	☐	☐	☐	☐	
E46. Operations Research (all courses)	☐	☐	☐	☐	
E47. Senior Seminar/ Independent Study in Mathematics	☐	☐	☐	☐	
E48. All other advanced level mathematics (excluding Math for Secondary School Teachers, Probability or Statistics courses)	☐	☐	☐	☐	
E49. Mathematics for Secondary School Teachers (all such courses not counted above)	☐	☐	☐	☐	

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 2021 enrollment and the number of sections of the course. Depending upon what you indicated above, you will be asked about distance/remote learning enrollment.

The following instructions apply throughout Sections E (mathematics courses), F (statistics courses), and G (computer science courses) (pages 12-23).

- Do NOT include any **dual enrollment** sections or enrollments in these tables. (In this questionnaire, a *dual enrollment* section is one that is conducted in a high school, 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. Include courses taught at high schools by college faculty)
- Column (a): Report **distance/remote learning enrollments** separately from other enrollments. Distance/remote learning courses are those courses offered by your institution for credit, in which more than half of the instruction occurs with the instructor and the students separated by time and /or place, facilitated by technology (e.g. courses in which more than half of the course is taught online synchronously or asynchronously, or by computer software, or by other technologies).
- Columns (c) and (d) 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 (E13-1 column (c)) and the total number of recitation sections for all the large lectures (E13-1 column (d)). Please treat any large class that is sometimes 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".
- **Courses, sections, and sessions.** In this questionnaire, "course" is used to refer to the topic area (e.g., Calculus 1 or Number Theory). You may have multiple faculty teaching the same course in the same term but at different times or locations; these divisions of the topic area into separate instances of teaching are called sections. Within a section, you may have times when the students are divided into laboratory or recitation sessions; these are counted as recitation sessions, not as separate sections.
- For all courses except as marked in E13, E14, E15, E16, 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.
- 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 2021**.
- If an undergraduate course contains a mixture of graduate and undergraduate students, report them all in column (b).

E50. Please enter the total fall 2021 enrollments, number of sections, and recitation sections below, as indicated.

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

Your catalog course codes	Total fall 2021 distance /remote education enrollments[1] (a)	Total fall 2021 enrollment NOT in distance/ remote education and NOT dual enrollments[2] (b)	Number of sections corre-sponding to column (b) [3] (c)	Total number of recitation/ problem/ laboratory sections[4] (where applicable) (d)

[1]Courses offered by your institution for credit, in which half or more of the instruction occurs with the instructor and the students separated by time and /or place, and facilitated by technology (e.g., courses in which half or more of the course is taught online synchronously or asynchronously, or by computer software, or by other technologies).

[2]Do not include any dual enrollment courses, i.e., courses taught in a high school by a high school instructor for which high school students may obtain both high school credit and, simultaneously, college credit through your institution.

[3]Report a calculus class along with its recitation/problem/laboratory sessions as one section.

[4]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.

E51. You reported a total of [#] sections in fall 2021, distributed by course type as shown below. For each course type, please provide the number of sections taught by tenured or tenure-eligible faculty, other full-time faculty, part-time faculty, and graduate teaching assistants.

◆ Cells left blank will be interpreted as zeros

Type of course and your applicable catalog course codes	Total number of sections (a)	Of the number in column (a), how many sections are taught by: Full-time faculty[1] Tenured or Tenure-eligible, Faculty (b)	Full-time faculty[1] Other Full-time Faculty (c)	Part-time Faculty (d)	Graduate Teaching Assistants[2] (e)
E51a. Precollege level (course code list)					
E51b. Introductory level, including precalculus (course code list)					
E51c. Mainstream Calculus I) —Lecture with separate recitation (course code list)					
E51d. Mainstream Calculus I) — Sections that meet as a class (course code list)					
E51e. Mainstream Calculus I) —Other sections (course code list)					
E51f. Mainstream Calculus II —Lecture with separate recitation (course code list)					

[1] **If your institution does not recognize tenure**, report sections taught by your permanent full-time faculty in column (b) and sections taught by other full-time faculty in column (c). If your institution does recognize tenure but has **faculty with renewable contracts, report these faculty as other full-time faculty** (column c).

Full-time faculty teaching in your department and holding joint appointments with other departments should be counted in column (b) 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 (d) if their fall 2021 teaching in your department is less than or equal to 50% of their total fall teaching assignment, and they should be reported in column (c) otherwise. (Example: If a tenured physics professor with a joint appointment in your department teaches a total of two courses in fall 2021, with exactly one being in your department and hence mathematics comprised 50% of the fall teaching assignment, then that person would be counted as parttime in your department.)

[2] 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.

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

Type of course and your applicable catalog course codes	Total number of sections (a)	Of the number in column (a), how many sections are taught by: Full-time faculty[1] Tenured or Tenure-eligible, Faculty (b)	Full-time faculty[1] Other Full-time Faculty (c)	Part-time Faculty (d)	Graduate Teaching Assistants[2] (e)
E51g. Mainstream Calculus II — Sections that meet as a class (course code list)					
E51h. Mainstream Calculus II —Other sections (course code list)					
E51i. Mainstream Calculus III (and IV, etc.) —Lecture with separate recitation (course code list)					
E51j. Mainstream Calculus III (and IV, etc.) —Sections that meet as a class (course code list)					
E51k. Mainstream Calculus III (and IV, etc.) —Other sections (course code list)					
E51l. Non-mainstream Calculus —Lecture with separate recitation (course code list)					
E51m. Non-mainstream Calculus — Sections that meet as a class (course code list) —Other sections					
E51n. Non-mainstream Calculus —Other sections not listed above (course code list)					
E51o. Non-mainstream Calculus II, III, etc. (course code list)					
E51p. Other Calculus Level Courses (course code list)					
E51q. Advanced Undergraduate Level (course code list)					

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.

Which of the following courses are taught in your department in Fall 2021, will be taught in Spring 2022, or were taught at any time in 2020-21? You may use different titles for these courses, and may have multiple courses that match a particular course name.

- Enter an X in each applicable box.
- Do **not** include courses taught in other departments, learning centers, or developmental/remedial programs separate from your mathematics program or department.
- Include courses taught through distance/remote education.
- Please also indicate which catalog codes are used to identify those courses. This information will be used to generate a reduced course list suitable for your department so reporting on enrollments will be easier.
- Make sure that no course is reported in more than one row.
- **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). Please treat any large class that is sometimes 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."

Name of Course (or equivalent)	Taught in fall 2021	Catalog code(s) used for Fall 2021 (use comma to separate codes)[1]
Statistics		
INTRODUCTORY STATISTICS (no calculus prerequisite; designed for non-majors/minors [General Education Courses] but may be taken by major/minors**)**		
F1-1. Lecture with separately scheduled recitation/problem/laboratory sessions	☐	
F1-2. Individual sections not in F1-1, that meet as a class with an instructor at a regularly scheduled time	☐	
F1-3. Other sections not listed above	☐	
INTRODUCTORY STATISTICS (calculus prerequisite)		
F2-1. Lecture with separately scheduled recitation/problem/laboratory sessions	☐	
F2-2. Individual sections not in F2-1, that meet as a class with an instructor at a regularly scheduled time	☐	
F2-3. 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.	Intermediate statistics (non-calculus)	☐	
F6.	Other introductory level Probability or Statistics courses designed for non-majors/minors	☐	

[1] For F-1 and F-2, enter course identifiers that are sufficiently distinct to separate courses with recitation sessions, courses that meet as a class, and other sections.

Which of the following courses are taught in your department in Fall 2021, will be taught in Spring 2022, or were taught at any time in 2020-21? You may use different titles for these courses, and may have multiple courses that match a particular course name.

- Enter an X in each applicable box.
- Do **not** include courses taught in other departments, learning centers, or developmental/remedial programs separate from your mathematics program or department.
- Include courses taught through distance/remote education.
- Please also indicate which catalog codes are used to identify those courses. This information will be used to generate a reduced course list suitable for your department so reporting on enrollments will be easier.
- Make sure that no course is reported in more than one row.
- **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). Please treat any large class that is sometimes 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."

Name of Course (or equivalent)	Taught in fall 2021 (a)	Will be taught in spring 2022 (b)	Taught during academic year 2020-21 (c)	Offer as distance/ remote learning course[1] (d)	Catalog code(s) used for courses offered Fall 2021 (not for courses offered Spring 2022 or previous academic year A) (use comma to separate codes) (e)
INTERMEDIATE AND ADVANCED LEVEL					
F7. Combined Probability & Statistics (calculus prerequisite)	☐	☐	☐	☐	
F8. Probability (calculus prerequisite)	☐	☐	☐	☐	
F9. Mathematical Statistics (calculus prerequisite)	☐	☐	☐	☐	
F10. Stochastic Processes	☐	☐	☐	☐	
F11. Data Science/Analytics/Statistical Learning	☐	☐	☐	☐	
F12. Design & Analysis of Experiments (ANOVA)	☐	☐	☐	☐	
F13. Applied Regression	☐	☐	☐	☐	
F14. Linear Models I	☐	☐	☐	☐	
F15. Linear Models II	☐	☐	☐	☐	
F16. Biostatistics	☐	☐	☐	☐	

F17. Nonparametric Statistics	☐	☐	☐	☐	
F18. Categorical Data Analysis	☐	☐	☐	☐	
F19. Sample Survey Design & Analysis	☐	☐	☐	☐	
F20. Statistical Computing or Software	☐	☐	☐	☐	
F21. Bayesian Statistics	☐	☐	☐	☐	
F22. Statistical Consulting	☐	☐	☐	☐	
F23. Senior Seminar/Capstone	☐	☐	☐	☐	
F24. All other upper level Probability & Statistics related courses	☐	☐	☐	☐	

[1]Distance/remote learning courses are those courses offered by your institution for credit, in which half or more of the instruction occurs with the instructor and the students separated by time and /or place, and facilitated by technology (e.g. courses in which the majority of the course is taught online synchronously or asynchronously, or by computer software, or by other technologies).

F25. Please enter the total fall 2021 enrollments, number of sections, and recitation sections below, as indicated.

Instructions

- Do NOT include any **dual enrollment** sections or enrollments in these tables. (In this questionnaire, a *dual enrollment* section is one that is conducted in a high school, 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. Include courses taught at high schools by college faculty)
- Column (a): Report **distance/remote learning enrollments** separately from other enrollments. Distance/remote learning courses are those courses offered by your institution for credit, in which more than half of the instruction occurs with the instructor and the students separated by time and /or place, facilitated by technology (e.g. courses in which more than half of the course is taught online synchronously or asynchronously, or by computer software, or by other technologies).
- Columns (c) and (d) 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 Introductory Statistics, you will be asked for both the number of large lecture courses (F1-1 column (c)) and the total number of recitation sections for all the large lectures (F1-1 column (d)). Please treat any large class that is sometimes 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".
- **Courses, sections, and sessions.** In this questionnaire, "course" is used to refer to the topic area (e.g., Calculus 1 or Number Theory). You may have multiple faculty teaching the same course in the same term but at different times or locations; these divisions of the topic area into separate instances of teaching are called sections. Within a section, you may have times when the students are divided into laboratory or recitation sessions; these are counted as recitation sessions, not as separate sections.
- For all courses except as marked in 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.
- 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 2021**.
- If an undergraduate course contains a mixture of graduate and undergraduate students, report them all in column (b).

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

Your catalog course codes	Total fall 2021 distance/ remote education	Total fall 2021 enrollment NOT in distance/	Number of sections corre-sponding	Total number of recitation/ problem/

	enrollments[1] (a)	remote education and NOT dual enrollments[2] (b)	to column (b) [3] (c)	laboratory sections[4] (where applicable) (d)

[1]Courses offered by your institution for credit, in which half or more of the instruction occurs with the instructor and the students separated by time and /or place, and facilitated by technology (e.g. courses in which half or more of the course is taught online (synchronously or asynchronously), or by computer software, or by other technologies).

[2]Do not include any dual enrollment courses, i.e., courses taught in a high school by a high school instructor for which high school students may obtain both high school credit and, simultaneously, college credit through your institution.

[3]Report a calculus class along with its recitation/problem/laboratory sessions as one section.

[4]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.

F26. You reported a total of # sections in fall 2021, distributed by course type as shown below. For each course type, please provide the number of sections taught by tenured or tenure-eligible faculty, other full-time faculty, part-time faculty, and graduate teaching assistants.

Instructions

- 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 2021.**

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

Type of course and your applicable catalog course codes	Total number of sections (a)	Of the number in column (a), how many sections are taught by: Full-time faculty[1] Tenured or Tenure-eligible, Faculty (b)	Full-time faculty[1] Other Full-time Faculty (c)	Part-time Faculty (d)	Graduate Teaching Assistants[2] (e)
a. Introductory Statistics (no calculus prerequisite) —Lecture with separate recitation (course code list)					
b. Introductory Statistics (no calculus prerequisite) —Sections that meet as a class (course code list)					
c. Introductory Statistics (no calculus prerequisite) —Other sections (course code list)					

[1]**If your institution does not recognize tenure**, report sections taught by your permanent full-time faculty in column (b) and sections taught by other full-time faculty in column (c). If your institution does recognize tenure but has **faculty with renewable contracts, report these faculty as other full-time faculty** (column c).

Full-time faculty teaching in your department and holding joint appointments with other departments should be counted in column (b) 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 (d) if their fall 2021 teaching in your department is less than or equal to 50% of their total fall teaching assignment, and they should be reported in column (c) otherwise. (Example: If a tenured physics professor with a joint appointment in your department teaches a total of two courses in fall 2021, with exactly one being in your department and hence mathematics comprised 50% of the fall teaching assignment, then that person would be counted as parttime in your department.)

[2] 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.

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

Type of course and your applicable catalog course codes	Total number of sections (a)	Of the number in column (a), how many sections are taught by: Full-time faculty[1] Tenured or Tenure-eligible, Faculty (b)	Full-time faculty[1] Other Full-time Faculty (c)	Part-time Faculty (d)	Graduate Teaching Assistants[2] (e)
d. Introductory Statistics (calculus prerequisite) (not for majors) — Lecture with separate recitation (course code list)					
e. Introductory Statistics (calculus prerequisite) (not for majors) — Sections that meet as a class (course code list)					
f. Introductory Statistics (calculus prerequisite) (not for majors) — Other sections (course code list)					
g. Statistics for Pre-service Teachers (course code list)					
h. Other introductory level Statistics (course code list)					
i. Advanced Undergraduate Level (course code list)					

G. Computer Science Courses (Fall 2021)

G. Does your department offer any Computer Science courses?

Yes ..... ☐ ⟶ If Yes, go to G1 below.

No ..... ☐ ⟶ If No, go to Section H.

- *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

Which of the following courses are taught in your department in Fall 2021? You may use different titles for these courses, and may have multiple courses that match a particular course name.

- See the complete instructions for this table in Section E.

Name of Course (or equivalent)	Taught in fall 2021 (a)	Catalog code(s) used for courses offered Fall 2021 (not for courses offered Spring 2022 or previous academic year A) (use comma to separate codes) (c)
Computer Science		
GENERAL EDUCATION COURSES		
G1. Computers and Society, Issues in CS	☐	
G2. Intro. to Software Packages	☐	
G3. Other CS General Education Courses	☐	
INTRODUCTORY CS COURSES		
G4. Computer Programming I	☐	
G5. Computer Programming II	☐	
G6. Discrete Structures DS)[4], but not math courses E21 or E30 in Section E above	☐	
G7. All other introductory level CS courses	☐	

Name of Course (or equivalent)	Taught in fall 2021 (a)	Catalog code(s) used for courses offered Fall 2021 (not for courses offered Spring 2022 or previous academic year A) (use comma to separate codes) (e)
INTERMEDIATE LEVEL		
G8. Algorithms and Complexity (AL)[2]	☐	
G9. Architecture and Organization (AR)[2]	☐	
G10. Operating Systems (OS)[2]	☐	
G11. Networking and Communication (NC)[2]	☐	
G12. Programming Languages (PL)[2]	☐	
G13. Human-Computer Interaction (HCI)[2]	☐	
G14. Intelligent Systems (IS)[2]	☐	
G15. Information Management (IM)[2]	☐	
G16. Social Issues and Professional Practice (SP)[2]	☐	
G17. Software Development Fundamentals (SDF)[2]	☐	
G18. Computational Science (CN)[2]	☐	
UPPER LEVEL		
G19. Graphics and Visualization (GV)[2]	☐	
G20. Information Assurance and Security (IAS)[2]	☐	
G21. Parallel and Distributed Computing (PD)[2]	☐	
G22. All other intermediate or advanced level CS Courses (including knowledge areas PBD, SE, SF) [2]	☐	

[1]Distance/remote learning courses are those courses offered by your institution for credit, in which half or more of the instruction occurs with the instructor and the students separated by time and /or place, and facilitated by technology (e.g. courses in which the majority of the course is taught online synchronously or asynchronously, or by computer software, or by other technologies).
[2] Knowledge areas from Computer Science Curricula 2013

G23. Please enter the total fall 2021 enrollments and number of sections below, as indicated.

Instructions

- Do NOT include any **dual enrollment** sections or enrollments in these tables. (In this questionnaire, a *dual enrollment* section is one that is conducted in a high school, 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. Include courses taught at high schools by college faculty)
- Column (a): Report **distance/remote learning enrollments** separately from other enrollments. Distance/remote learning courses are those courses offered by your institution for credit, in which more than half of the instruction occurs with the instructor and the students separated by time and /or place, facilitated by technology (e.g. courses in which more than half of the course is taught online synchronously or asynchronously, or by computer software, or by other technologies).
- **Courses, sections, and sessions.** In this questionnaire, "course" is used to refer to the topic area (e.g., Calculus 1 or Number Theory). You may have multiple faculty teaching the same course in the same term but at different times or locations; these divisions of the topic area into separate instances of teaching are called sections. Within a section, you may have times when the students are divided into laboratory or recitation sessions; these are counted as recitation sessions, not as separate sections.
- 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 2021**.
- If an undergraduate course contains a mixture of graduate and undergraduate students, report them all in column (b).

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

Your catalog course codes	Total fall 2021 distance/remote education enrollments[1] (a)	Total fall 2021 enrollment NOT in distance/ remote education and NOT dual enrollments[2] (b)	Number of sections corresponding to column (b)[3] (c)

[1]Courses offered by your institution for credit, in which half or more of the instruction occurs with the instructor and the students separated by time and /or place, and facilitated by technology (e.g. courses in which half or more of the course is taught online synchronously or asynchronously, or by computer software, or by other technologies).

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

[3]Report a calculus class along with its recitation/problem/laboratory sessions as one section.

[4]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.

G24. You reported a total of # sections in fall 2021, distributed by course type as shown below. For each course type, please provide the number of sections taught by tenured or tenure-eligible faculty, other full-time faculty, part-time faculty, and graduate teaching assistants.

Instructions

- 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 2021.**

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

Type of course and your applicable catalog course codes	Total number of sections (a)	Of the number in column (a), how many sections are taught by: Full-time faculty[1] Tenured or Tenure-eligible, Faculty (b)	Full-time faculty[1] Other Full-time Faculty (c)	Part-time Faculty (d)	Graduate Teaching Assistants[2] (e)
a. General Education Course (course code list)					
b. Introductory CS (course code list)					
c. Intermediate Level (course code list)					
d. Upper Level (course code list)					

[1]**If your institution does not recognize tenure**, report sections taught by your permanent full-time faculty in column (b) and sections taught by other full-time faculty in column (c). If your institution does recognize tenure but has **faculty with renewable contracts, report these faculty as other full-time faculty** (column c).

Full-time faculty teaching in your department and holding joint appointments with other departments should be counted in column (b) 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 (d) if their fall 2021 teaching in your department is less than or equal to 50% of their total fall teaching assignment, and they should be reported in column (c) otherwise. (Example: If a tenured physics professor with a joint appointment in your department teaches a total of two courses in fall 2021, with exactly one being in your department and hence mathematics comprised 50% of the fall teaching assignment, then that person would be counted as parttime in your department.)

[2] 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.

H. Precalculus/Introductory Mathematics and Statistics Instruction

Introductory Mathematics

H1. Has your department offered a non-traditional "pathways" course sequence within the last five years?

Yes ..... ☐

No ..... ☐

("Pathways" is defined to be a single course or course sequence that enables students to complete a college-level gateway mathematics or statistics course that is aligned to students' academic and/or career goals within one academic year.)

H2. Does your department offer any Precollege or Introductory Level (including Precalculus) mathematics courses for credit (courses E1-E12) in Fall 2021?

Yes..... ☐ ⟶ If Yes, go to H3

No ..... ☐ ⟶ If No, go to H4.

H3. How often are each of the following instructional strategies used in the Precollege and Introductory Level mathematics courses (courses E1-E12) you offered for credit in Fall 2021?

		At least once a week	Occasionally	Almost never
a.	Focusing on conceptual understanding over formulas and procedures	☐	☐	☐
b.	Integrating real-world applications	☐	☐	☐
c.	Using student-centered active learning strategies	☐	☐	☐
d.	Using assessments such as regular graded homework or quizzes used to inform teaching	☐	☐	☐

H. Precalculus/Introductory Mathematics and Statistics Instruction (cont.)

Introductory Statistics

H4. Does your department offer an Introductory Statistics (no calculus prerequisite) course (course F1) in Fall 2021?

Yes..... ☐ ⟶ If Yes, go to H5

No ..... ☐ ⟶ If No, go to H8.

H5. How many different kinds of introductory statistics courses designed for non-majors that have no calculus prerequisite does your department offer? (e.g. statistics for social scientists, for life scientists, or as general education courses for a broad audience)

1 ..... ☐

2 ..... ☐

3 ..... ☐

More than 3 ..... ☐

The following questions are about instruction in the course F1: Introductory Statistics (no calculus prerequisite) on page 15. If you offer more than one such course, choose the course that is aimed at the most general audience.

H6. How often are each of these instructional strategies used in the Introductory Statistics courses taught in your department in Fall 2021?

		At least once a week	Occasionally	Almost never
a.	Focusing on conceptual understanding over formulas and procedures	☐	☐	☐
b.	Integrating real world applications	☐	☐	☐
c.	Students collect, organize, and analyze real data	☐	☐	☐
d.	Using student-centered active learning strategies	☐	☐	☐
e.	Using assessments such as regular graded homework or quizzes used to inform teaching	☐	☐	☐

H. Precalculus/Introductory Mathematics and Statistics Instruction (cont.)

H7. Technology used in teaching Introductory Statistics could include graphing calculators, statistical software, or online applets.

How successful is your program in adopting each of the following use of technology in your Introductory Statistics (no calculus prerequisite) courses taught in Fall 2021?

		Very Successful	Somewhat Successful	Not Successful
a.	Students use technology to explore concepts	☐	☐	☐
b.	Instructors use technology to demonstrate concepts	☐	☐	☐
c.	Students use technology to analyze data	☐	☐	☐
d.	Students' ability to use technology to solve problems is assessed	☐	☐	☐

H8. Are there other introductory statistics courses at your institution, offered by departments outside of the mathematical sciences?

Yes..... ☐ ⟶ If Yes, go to H9

No ..... ☐ ⟶ If No, go to H10.

H9. Enter the Fall 2021 total enrollment in all such introductory statistics courses, offered outside of the mathematical sciences, at your institution. _____

H10. Are there introductory data science courses at your institution offered by other departments?

Yes..... ☐ ⟶ If Yes, go to H11

No ..... ☐ ⟶ If No, go to Section I.

H11. Enter the Fall 2021 total enrollment in all such introductory data science courses, offered outside of your department at your institution. _____

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, 2020 and June 30, 2021. Include joint majors and double majors[1]

Number of majors receiving degrees..... ☐

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 majors[1] in your totals. Use the Other Mathematics Major category for a major in your department who does not fit into one of the listed categories.

Area of Major	Men	Women	Nonbinary
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 that the sum of the credit hours required by the separate majors.

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	☐	☐	☐
b. Real Analysis I	☐	☐	☐
c. Modern Algebra I or Real Analysis I (majors may choose either to fulfill this requirement)	☐	☐	☐
d. A one-year upper level sequence	☐	☐	☐
e. At least one computer science course	☐	☐	☐
f. At least one statistics course	☐	☐	☐
g. At least one applied mathematics course beyond calculus level (in Section E)	☐	☐	☐
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)	☐	☐	☐

I4. Give your best estimate of the percentage of your department's graduating majors from the previous academic year 2020-21 (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	%

I5. 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	☐	☐
b. We asked graduates of our undergraduate program to comment on and suggest changes in our undergraduate program	☐	☐
c. Other departments at our institution were invited to comment on the preparation that their students received in our courses	☐	☐
d. Data on our students' progress in subsequent mathematics courses were gathered and analyzed	☐	☐
e. We have developed a set of student learning outcomes for our program	☐	☐
f. We have assessed student learning objectives in courses required in our major	☐	☐
g. We have a placement system for first-year students and we gathered and analyzed data on its effectiveness	☐	☐
h. Our department's program assessment activities led to changes in our undergraduate program	☐	☐

I6. Please indicate the extent to which the following activities have taken place in the past year in your department in response to increased national attention to equity, diversity, and inclusion issues (here the term “demographic” includes race, ethnicity, gender, disability status, and other characteristics of individuals).

	None	Some	A lot	Not applicable
a. Faculty discussion designed to increase awareness of equity, diversity, and inclusion issues	☐	☐	☐	
b. Student discussion designed to increase awareness of equity, diversity, and inclusion issues	☐	☐	☐	
c. Program or policy changes to affect the demographic balance of faculty in the mathematical sciences.	☐	☐	☐	
d. Program or policy changes to affect the demographic balance of undergraduate students in mathematical sciences.	☐	☐	☐	
e. Program or policy changes intended to affect the demographic balance of graduate students in mathematical sciences.	☐	☐	☐	☐
f. Consideration of existing or new programs to assist underrepresented groups and/or at-risk students in the mathematical sciences.	☐	☐	☐	

g. Please describe any other steps your department or institution has taken in the past year that deal with equity, diversity, and inclusion as they pertain to the study of and employment in the mathematical sciences.

I7. 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	☐	☐
b. An undergraduate Mathematical Science Club	☐	☐
c. Special mathematics programs to encourage women	☐	☐
d. Special mathematics programs to encourage minorities	☐	☐
e. Opportunities to participate in mathematical science contests	☐	☐
f. Special mathematics statistics lectures/colloquia not part of a mathematical science club	☐	☐
g. Mathematical sciences outreach opportunities in local K–12 schools	☐	☐
h. Undergraduate research opportunities in mathematical sciences	☐	☐
i. Independent study opportunities in mathematical sciences	☐	☐
j. Assigned faculty advisers in mathematical sciences	☐	☐
k. Opportunity to write a senior thesis in mathematical sciences	☐	☐
l. A career day for mathematical sciences majors	☐	☐
m. Special advising about graduate school opportunities in mathematical sciences	☐	☐
n. Opportunity for an internship experience	☐	☐
o. Opportunity to participate in a senior seminar	☐	☐
p. Opportunity to tutor, grade papers, or TA in the department	☐	☐
q. Opportunity to provide mathematical or statistical consulting to client	☐	☐

I8. 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, 2020 – August 31, 2021.

a. Undergraduate research project in the mathematical sciences _____

b. Internship in mathematical sciences_____

c. Mathematical or statistical consulting for client _____

I9. 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. Mathematics and social justice ☐
k. Other ☐

I10a. Does your department offer a minor in statistics?

Yes ☐ → If Yes, go to I10b

No ☐ → If No, go to I11.

I10b. How many students graduated with a minor in statistics from your department between July 1, 2020 and June 30, 2021? _____

I11. Does your department offer a major in statistics?

Yes ..... ☐ ⟶ If Yes, go to I12

No ..... ☐ ⟶ If No, go to I13.

I12. 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	☐	☐	☐
b. Calculus II	☐	☐	☐
c. Multivariable Calculus.....	☐	☐	☐
d. Linear Algebra/Matrix Theory	☐	☐	☐
e. At least one computer science course	☐	☐	☐
f. At least one applied mathematics course (not including a, b, c, d above)	☐	☐	☐
g. A capstone experience (e.g., a senior project, a senior thesis, a senior seminar, or an internship)	☐	☐	☐
h. An exit exam (written or oral)	☐	☐	☐
i. At least one upper level Probability course	☐	☐	☐
j. At least one upper-level Mathematical Statistics course	☐	☐	☐
k. At least one applied statistics course	☐	☐	☐
l. At least one upper-level Linear Models course	☐	☐	☐
m. One Bayesian Inference course.....	☐	☐	☐

I13. 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 ..... ☐

Questions regarding the preparation of pre-service grades 9-12 mathematics teachers:

J1. Does your institution offer a program of study that leads to obtaining credentials to teach mathematics in public high schools (any license that includes grades 9-12) in your state?

Yes..... ☐ ⟶ If Yes, go to J2

No ..... ☐ ⟶ If No, skip to J5.

J2. How many semester hours of mathematics or statistics courses from your department are required by your institution's program of certification for pre-service secondary mathematics teachers (grades 9-12)? _____

J3. How many semester hours of mathematics or statistics courses from your department with a primary focus on high school mathematics from an advanced viewpoint are required in your institution's program of certification for pre-service secondary mathematics teachers (grades 9-12)? _____

J4. Considering the teacher preparation program at your institution, in each of the following core areas indicate whether the core area is required of all students seeking mathematics certification, if the course is generally taken by those seeking certification (if it is not required), and if in that core area your department offers a special course that is specifically designed for pre-service secondary mathematics teachers.

Course	Required		If required is "No" Generally Taken		Special Course Offered	
	Yes	No	Yes	No	Yes	No
a. Advanced Calculus/Analysis	☐	☐	☐	☐	☐	☐
b. Modern Algebra	☐	☐	☐	☐	☐	☐
c. Number Theory	☐	☐	☐	☐	☐	☐
d. Geometry	☐	☐	☐	☐	☐	☐
e. Discrete Mathematics	☐	☐	☐	☐	☐	☐
f. History of Mathematics	☐	☐	☐	☐	☐	☐
g. Introductory Statistics that includes a simulation-based approach to inference (whether or not accompanied by a normal-based approach	☐	☐	☐	☐	☐	☐
h. Introductory Statistics that only includes a normal-based (non-simulation-based) approach to inference	☐	☐	☐	☐	☐	☐
i. Statistical Methods with an introductory course as a prerequisite	☐	☐	☐	☐	☐	☐
j. Statistical Modeling	☐	☐	☐	☐	☐	☐
k. Probability and/or statistics with calculus prerequisite	☐	☐	☐	☐	☐	☐
l. Other (specify) _____	☐	☐	☐	☐	☐	☐

Questions regarding the preparation of pre-service teachers of mathematics in grades 6-8:

J5. Does your institution offer a program of study that leads to obtaining credentials to teach mathematics in public middle schools (any license that includes grades 6-8) in your state?

Yes, and the program has different requirements from those for teaching mathematics at the elementary or high school levels	☐ →	Go to J6.
Yes, but the program is identical to that for either the high school mathematics teacher preparation program or the elementary mathematics teacher preparation program.	☐ →	Skip to J9.
No.	☐ →	Skip to J9.

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 in statistics from your department are required by your institution's program of certification for pre-service middle grades (6-8) teachers of mathematics?

_____

J8. 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? _____

Questions regarding the preparation of pre-service teachers of mathematics in grades K-5.

J9. Does your institution offer a program of study that leads to obtaining credentials to teach mathematics in public elementary schools (any license that includes grades K-5) in your state?

Yes..... ☐ ⟶ If Yes, go to J10

No ..... ☐ ⟶ If No, skip to Section K.

J10. 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? _____

J11. How many semester hours of courses in statistics from your department are required by your institution's program of certification for pre-service elementary grades (K-5) teachers of mathematics? _____

J12. 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? _____

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 2025).

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 2023, will be of use to you and your department.

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