

Four-Year Statistics Questionnaire



STATISTICS QUESTIONNAIRE

CBMS 2021

CONFERENCE BOARD OF THE MATHEMATICAL SCIENCES

SURVEY OF UNDERGRADUATE PROGRAMS IN THE MATHEMATICAL SCIENCES

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 an undergraduate major in statistics. Most of the statistics departments in our random sample also offer higher degrees in statistical 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 statistical sciences (including probability) 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 statistics (e.g., Department of Statistics and Computer Science or Statistics and Operations Research), please report on all the courses offered by your department.

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 20850-312**

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. These enrollments should NOT be included in subsequent sections.

Course	Total Dual Enrollments	
	Last Term= Spring 2021	This Term= Fall 2021
a. Statistics		

B3. 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 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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Faculty use of online tools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Student interest in online teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Student use of online tools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. We offer some “hybrid” courses to on-campus (face-to-face) learners and remote learners in the same section.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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, 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 statistics 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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Maintaining academic integrity on assessments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Grade inflation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Building/maintaining community among faculty and students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Maintaining academic quality instruction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Engaging students online.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Replicating active learning in a virtual environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Availability of equipment and technical support for faculty/students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D. Faculty Profile (Fall 2021)

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 computer science 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., statistics 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.....	<input type="checkbox"/>	<input type="checkbox"/>
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).....	<input type="checkbox"/>	<input type="checkbox"/>
D2.	Part-time faculty (those who are halftime or less in your department)	<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. Probability and Statistics 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 statistics program or department.
- Please also indicate which catalog codes are used to identify those courses taught in Fall 2021. 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.
- If your department is broader than just statistics (e.g., Department of Statistics and Computer Science or Statistics and Operations Research), please use E24 to report on the courses outside of probability and statistics.
- **Introductory Statistics classes.** You will be asked to list separately Introductory Statistics 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, you will be asked about large lecture courses (E1-1 column). 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 courses offered Fall 2021 (not for courses offered Spring 2022 or previous academic year) (use comma to separate codes)
Statistics		
INTRODUCTORY STATISTICS (no calculus prerequisite; designed for non-majors/minors [General Education Courses] but may be taken by major/minors)		
E1-1. Lecture with separately scheduled recitation/problem/laboratory sessions	<input type="checkbox"/>	
E1-2. Individual sections not in E1-1, that meet as a class with an instructor at a regularly scheduled time	<input type="checkbox"/>	
E1-3. Other sections not listed above	<input type="checkbox"/>	
INTRODUCTORY STATISTICS (calculus prerequisite)		
E2-1. Lecture with separately scheduled recitation/problem/laboratory sessions	<input type="checkbox"/>	
E2-2. Individual sections not in E2-1, that meet as a class with an instructor at a regularly scheduled time	<input type="checkbox"/>	
E2-3. Sections not listed above	<input type="checkbox"/>	

¹Distance/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).

²For E1 and E2, enter course identifiers that are sufficiently distinct to separate courses with recitation sessions, courses that meet as a class, and other sections.

E. Probability and Statistics Courses (Fall 2021) (cont.)

Name of Course (or equivalent)	Taught in Fall 2021	Catalog code(s) used for courses offered Fall 2021 (not for courses offered Spring 2022 or previous academic year) (use comma to separate codes)
OTHER INTRODUCTORY STATISTICS courses		
E3. Statistics for pre-service elementary and/or middle grade teachers	<input type="checkbox"/>	
E4. Statistics for pre-service secondary school teachers	<input type="checkbox"/>	
E5. Intermediate statistics (non-calculus)	<input type="checkbox"/>	
E6. Other introductory level Probability or Statistics courses designed for non-majors/minors	<input type="checkbox"/>	

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 statistics program or department.
- Please also indicate which catalog codes are used to identify those courses taught in Fall 2021. 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.
- If your department is broader than just statistics (e.g., Department of Statistics and Computer Science or Statistics and Operations Research), please use E24 to report on the courses outside of probability and statistics.
- ~~**Introductory Statistics classes.** You will be asked to list separately Introductory Statistics 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, you will be asked about large lecture courses (E1-1 column). 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) (use comma to separate codes) (e)
INTERMEDIATE AND ADVANCED LEVEL					
E7. Combined Probability & Statistics (calculus prerequisite)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E8. Probability (calculus prerequisite)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E9. Mathematical Statistics (calculus prerequisite)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E10. Stochastic Processes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E11. Data Science/Analytics/Statistical Learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E12. Design & Analysis of Experiments (ANOVA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E13. Applied Regression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E14. Linear Models I	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

E15. Linear Models II	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E16. Biostatistics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E17. Nonparametric Statistics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E18. Categorical Data Analysis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E19. Sample Survey Design & Analysis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E20. Statistical Computing or Software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E21. Bayesian Statistics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E22. Statistical Consulting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E23. Senior Seminar/Capstone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E24. All other upper level Probability & Statistics related courses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

¹Distance/ 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, or by computer software, or by other technologies).

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 Section E (pages 10-12).

- **Courses, sections, and sessions.** In this questionnaire, “course” is used to refer to the topic area (e.g., Stochastic Processes or Biostatistics). 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.
- Below 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.
- If a course is cross-listed in both statistics and another department (such as mathematics, psychology, or engineering), count all students, regardless of how the course is listed on the students’ transcripts.
- 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 Section E deal with **enrollments in fall term 2021**.

E. Probability and Statistics Courses (Fall 2021) (cont.)

Statistics Questionnaire

E26. 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		Part-time Faculty (d)	Graduate Teaching Assistants ² (e)
		Tenured or Tenure-eligible, Faculty (b)	Other Full-time Faculty (c)		
E26a. Introductory Statistics (no calculus prerequisite) —Lecture with separate recitation (course code list)					
E26b. Introductory Statistics (no calculus prerequisite) —Sections that meet as a class (course code list)					
E26c. Introductory Statistics (no calculus prerequisite) —Other sections (course code list)					
E26d. Introductory Statistics (calculus prerequisite) (not for majors) — Lecture with separate recitation (course code list)					
E26e. Introductory Statistics (calculus prerequisite) (not for majors) — Sections that meet as a class (course code list)					

¹If 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 computer science 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 statistics 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.

E. Probability and Statistics Courses (Fall 2021) (cont.)

◆ Cells left blank will be interpreted as zeros		Of the number in column (a), how many sections are taught by:			
		Full-time faculty ¹		Part-time Faculty	Graduate Teaching Assistants ²
		Tenured or Tenure-eligible, Faculty	Other Full-time Faculty		
Type of course and your applicable catalog course codes	Total number of sections (a)	(b)	(c)	(d)	(e)
E26f. Introductory Statistics (calculus prerequisite) (not for majors) — Other sections (course code list)					
E26g. Statistics for Pre-service Teachers (course code list)					
E26h. Intermediate statistics (non-calculus) (course code list)					
E26i. Other introductory level Statistics (course code list)					
E26j. Advanced Undergraduate Level (course code list)					

F. Undergraduate Program (Fall 2021)

If you do not offer a major in statistics, check here and go to F5. Otherwise go to F1.

F1. Report the total number of your departmental majors who received their bachelor's degrees between July 1, 2020 and June 30, 2021. Include joint majors and double majors.¹

Number of majors receiving degrees.....

F2. Of the undergraduate degrees described in F1, 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 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. Statistics			
b. Biostatistics			
c. Actuarial Science			
d. Data Science			
e. Joint ¹ Statistics and with Computer Science			
f. Joint ¹ Statistics and with Mathematics			
g. Other Mathematics Majors.....			
h. Statistics Education			
i. Other Majors			

¹ A "double major" is a student who completes the degree requirements of two separate majors, one in statistics 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 statistics and some other program or department and typically requires fewer credit hours than the sum of the credit hours required by the separate majors.

F. Undergraduate Program (Fall 2021) (cont.)

F3. 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. 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"/>
k. At least one applied statistics course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. At least one upper-level Linear Models course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. A Bayesian Inference course.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F4. Give your best estimate of the percentage of your department's graduating majors from the previous academic year 2020-2021 (reported in I1) in each of the following categories. Please make the totals add to 100 percent.

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

F. Undergraduate Program (Fall 2021) (cont.)

F5. 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 statistics courses were gathered and analyzed	<input type="checkbox"/>	<input type="checkbox"/>
e. We have developed a set of student learning outcomes for our program	<input type="checkbox"/>	<input type="checkbox"/>
f. We have assessed student learning objectives in courses required in our major	<input type="checkbox"/>	<input type="checkbox"/>
g. We have a placement system for first-year students and we gathered and analyzed data on its effectiveness	<input type="checkbox"/>	<input type="checkbox"/>
h. Our department's program assessment activities led to changes in our undergraduate program	<input type="checkbox"/>	<input type="checkbox"/>

F. Undergraduate Program (Fall 2021) (cont.)

Statistics Questionnaire

F6. 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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Student discussion designed to increase awareness of equity, diversity, and inclusion issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. Program or policy changes to affect the demographic balance of faculty in the mathematical sciences.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d. Program or policy changes to affect the demographic balance of undergraduate students in mathematical sciences.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e. Program or policy changes intended to affect the demographic balance of graduate students in mathematical sciences.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Consideration of existing or new programs to assist underrepresented groups and/or at-risk students in the mathematical sciences.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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.

F7. For each of the following opportunities, indicate whether or not it is available to your undergraduate mathematical sciences students through your department or institutions.

	Available	Not available
a. Honors sections of departmental courses	<input type="checkbox"/>	<input type="checkbox"/>
b. An undergraduate statistics club	<input type="checkbox"/>	<input type="checkbox"/>
c. Special statistics programs to encourage women	<input type="checkbox"/>	<input type="checkbox"/>
d. Special statistics programs to encourage minorities.....	<input type="checkbox"/>	<input type="checkbox"/>
e. Opportunities to participate in statistics or data science competitions	<input type="checkbox"/>	<input type="checkbox"/>
f. Special statistics lectures/colloquia not part of a statistics club	<input type="checkbox"/>	<input type="checkbox"/>
g. Statistics outreach opportunities in local K–12 schools	<input type="checkbox"/>	<input type="checkbox"/>
h. Undergraduate research opportunities in statistics.....	<input type="checkbox"/>	<input type="checkbox"/>
i. Independent study opportunities in statistics.....	<input type="checkbox"/>	<input type="checkbox"/>
j. Assigned faculty advisers in statistics	<input type="checkbox"/>	<input type="checkbox"/>
k. Opportunity to write a senior thesis in statistics.....	<input type="checkbox"/>	<input type="checkbox"/>
l. A career day for statistics majors	<input type="checkbox"/>	<input type="checkbox"/>
m. Special advising about graduate school opportunities in statistical sciences	<input type="checkbox"/>	<input type="checkbox"/>
n. Opportunity for an internship experience or part-time employment in a professional statistical opportunity	<input type="checkbox"/>	<input type="checkbox"/>
o. Opportunity to participate in a senior seminar	<input type="checkbox"/>	<input type="checkbox"/>
p. Supervised consultation working in a consulting lab with clients	<input type="checkbox"/>	<input type="checkbox"/>
q. Opportunity to tutor, grade papers, or TA in the department	<input type="checkbox"/>	<input type="checkbox"/>
r. A defined gathering space for majors.....	<input type="checkbox"/>	<input type="checkbox"/>

F8. 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 statistics _____
- b. Internship in statistics _____
- c. Statistical consulting to client _____

F. Undergraduate Program (Fall 2021) (cont.)

F9a. Does your department offer a minor in statistics?

Yes..... → If Yes, go to F9b.

No → If No, go to F10.

F9b. How many students graduated with a minor in statistics from your department between July 1, 2020 and June 30, 2021?

Number of students.....

F10. Does your institution allow a student to meet an institutional, divisional, or general education graduation requirement in the mathematical sciences using an Advanced Placement course (taken while the student was in high school)?

Yes

No

G. Introductory Statistics Instruction

G1. 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.)

The following questions are about instruction in course E1: Introductory Statistics for non-majors/minors (no calculus prerequisite) on page 7.

G2. How many different kinds of introductory statistics courses designed for non-majors (general education courses) 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 E1: Introductory Statistics (no calculus prerequisite) on page 7. If you offer more than one such course, choose the course that is aimed at the most general audience.

G. Introductory Statistics Instruction (cont.)

G3. 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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Integrating real world applications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Students collect, organize, and analyze real data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Using student-centered active learning strategies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Using assessment such as regular graded homework or quizzes to inform teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

G4. 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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Instructors use technology to demonstrate concepts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Students use technology to analyze data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Students' ability to use technology to solve problems is assessed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

G. Introductory Statistics Instruction (cont.)

G5. Are there other introductory statistics courses at your institution, offered by departments outside of the mathematical sciences?

Yes..... → If Yes, go to G6

No → If No, go to G7

G6. Enter the Fall 2021 total enrollment in all such introductory statistics courses, offered outside of the mathematical sciences, at your institution. _____

G7. Are there introductory data science courses at your institution offered by other departments?

Yes..... → If Yes, go to G8

No → If No, go to Section H

G8. Enter the Fall 2021 total enrollment in all such introductory data science courses, offered outside of your department at your institution. _____

H. Pre-service Teacher Education in Statistics

Questions regarding the statistical preparation of pre-service teachers:

H1. 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 H2

No —————> If No, skip to H3

H2. If yes, for each of the following core areas indicate whether the core area is required of all students seeking certification that leads to obtaining credentials as a grades 9-12 mathematics teacher in public high schools in your state; if the course is generally taken by those seeking certification but not required; and if in that core area your department offers a special course that is specifically designed for pre-service grades 9-12 mathematics teachers.

Course	Required		If "Required" is "No": Generally Taken		Special Course Offered	
	Yes	No	Yes	No	Yes	No
	a. Introductory Statistics that includes a simulation-based approach to inference (whether or not accompanied by a normal-based approach)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Introductory Statistics that only includes a normal-based (non-simulation-based) approach to inference	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Statistical Methods with an introductory course as a prerequisite	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Statistical modeling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Probability and/or statistics with calculus prerequisite	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Other (please specify) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

H. Pre-service Teacher Education in Statistics (cont.)

H3. Does your institution offer a program of study that leads to obtaining credentials to teach mathematics at public middle schools (any license that includes grades 6-8) that is distinct from either the elementary or high school levels?

Yes..... → If Yes, go to H4

No → If No, skip to H5

H4. If yes, 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 teachers?

Number of semester hours.....

H5. 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 H6

No → If No, skip to Section I

H6. If yes, 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 teachers?

Number of semester hours.....

I. Comments and Suggestions

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.