Characteristics of Successful Programs in College Calculus - Instructor End
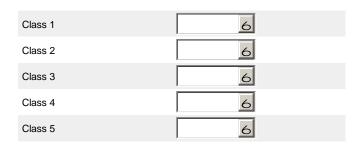
This is a continuation of the national survey of calculus instruction in colleges and universities across the United States. This research project is conducted by the Mathematical Association of America. The survey requests information about your instruction and the grade distribution of your students. Your answers are important to help us understand how calculus is being taught and how class size, instructional format, and available resources impact its effectiveness. You also will be asked to upload (or email or mail, if that is not possible) a copy of your final exam. All information that you submit will be held in complete confidence and your participation is voluntary. A summary of the information about the students, aggregated across all sections of calculus will be provided to the chair of the mathematics department, but no information about instructors, either individually or in aggregate, will be reported to anyone at your institution. By continuing on to complete the survey you consent to participate in this study. If you have any questions about this project, please contact Olga Dixon at (202) 319-8498 or via e-mail odixon@maa.org.

1. How many classes of Calculus I did you teach this term? (Note: Multiple sections that met for the same lecture count as one class)

2. For each Calculus class that you taught, indicate whether it was an honors or non-honors.

Class 1	6
Class 2	6
Class 3	6
Class 4	6
Class 5	6

3. At the end of the term, how many students were enrolled in each Calculus class that you taught?

Class 1	
Class 2	
Class 3	
Class 4	
Class 5	

4. Approximately what percentage of your students were prepared for the course?

	more than 80%	60 - 80%	40 - 60%	20 - 40%	less than 20%
Class 1	ʝ∩	ʝ∩	ʝ∩	ʝ∩	ʝ∩
Class 2	ʝ∩	ʝ∩	ʝ∩	ʝ∩	ʝ∩
Class 3	ʝ∩	ʝ∩	ʝ∩	ʝ∩	ʝ∩
Class 4	ʝ∩	ʝ∩	ʝ∩	ʝ∩	ʝ∩
Class 5	ʝ∩	ʝ∩	ʝ∩	ʝ∩	ʝ∩

5. How many times this term did your department or college organize an event (workshop, seminar, meeting, etc.) related to issues of teaching and learning mathematics?

ʝ∩ Zero　　ʝ∩ Once　　ʝ∩ Twice　　ʝ∩ Three times　　ʝ∩ More than three times　　ʝ∩ Don't know

6. How many times this term did you attend an event in question 5?

ʝ∩ Zero　　ʝ∩ Once　　ʝ∩ Twice　　ʝ∩ Three times　　ʝ∩ More than three times　　ʝ∩ N/A

7. How many office hours did you hold each week for Calculus I during the current semester?

8. How many office hours did your TA(s) hold each week for Calculus I during the current semester?

9. How often did you do the following *outside of class*?

	Never	Infrequently	Frequently	Very frequently
Helped students with course content during office hours	ʝ∩	ʝ∩	ʝ∩	ʝ∩
Helped students with course content outside of office hours	ʝ∩	ʝ∩	ʝ∩	ʝ∩
Mentored students regarding non-course content (e.g., career options, future course, etc.)	ʝ∩	ʝ∩	ʝ∩	ʝ∩

10. How many exams, not including the final, did you give?

11. Indicate how often the following occured:

	Never	Some class sessions	About half the class sessions	Most class sessions	Every class session
you gave a short quiz	j⌒	j⌒	j⌒	j⌒	j⌒
students turned in assignments (either hard copy or online)	j⌒	j⌒	j⌒	j⌒	j⌒

12. What was the format of the majority of the homework assignments?

- ᴊⁿ multiple choice items
- ᴊⁿ free response questions
- ᴊⁿ more or less equal amounts of both
- ᴊⁿ not applicable

13. How were homework assignments submitted? *Check all that apply.*

- ∈ on paper, in class
- ∈ electronically via email or fax
- ∈ via an on-line homework system (e.g., WeBWorK, MAPLE T.A., etc)
- ∈ not applicable

14. How were homework assignments graded? *Check all that apply.*

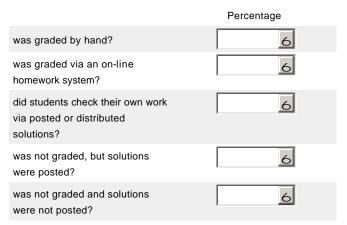- ∈ via an on-line homework system (e.g., WeBWorK, MAPLE T.A., etc)
- ∈ by hand by myself
- ∈ by hand by a grader
- ∈ solutions were posted or distributed for students to check their own work
- ∈ not applicable

15. Approximately what percent of each homework assignment:

	Percentage
was graded by hand?	6
was graded via an on-line homework system?	6
did students check their own work via posted or distributed solutions?	6
was not graded, but solutions were posted?	6
was not graded and solutions were not posted?	6

16. How many projects (group or individual) did you assign this term?

ʝ∩ 0

ʝ∩ 1

ʝ∩ 2

ʝ∩ more than 2

17. What percentage of students' course grade were the projects?

[   ]

18. In my Calculus I course:

ʝ∩ a common final was used for all sections.

ʝ∩ different sections used different finals.

19. How was your final exam for Calculus I graded?

ʝ∩ By myself without a rubric

ʝ∩ By myself using my own rubric

ʝ∩ By myself using a common rubric

ʝ∩ By myself with one or more TAs/graders

ʝ∩ By one or more TAs/graders

ʝ∩ By a group of instructors using a common rubric

ʝ∩ Multiple Choice Scantron

ʝ∩ Other (please specify)

[   ]

20. What other course materials did you make available for students? *Check all that apply.*

- ⊖ none
- ⊖ student prepared class notes
- ⊖ instructor prepared lecture notes
- ⊖ supplemental curriculum materials including in-class worksheets and online material
- ⊖ computer animations or interactive software
- ⊖ online lectures
- ⊖ Other (please specify)

[   ]

21. What technology did you require students to use <u>outside of class</u>? *Check all that apply.*

- ⊖ Mathematica, Maple, Matlab, etc
- ⊖ Graphing calculators
- ⊖ Online course websites
- ⊖ Java applets or other animations
- ⊖ Other (please specify)

[   ]

22. How frequently were the following technologies used <u>during class</u>?

	Never	Some class sessions	About half the class sessions	Most class sessions	Every class session
Instructor demonstration with a graphing calculator	⌣	⌣	⌣	⌣	⌣
Student use of graphing calculators	⌣	⌣	⌣	⌣	⌣
Instructor demonstration with computer algebra system (e.g., Maple, Mathematica, Matlab, etc.)	⌣	⌣	⌣	⌣	⌣
Student use of a computer algebra system (e.g., Maple, Mathematica, MATLAB, etc.)	⌣	⌣	⌣	⌣	⌣

23. When teaching my Calculus class, I:

	Never	Infrequently	Frequently	Very frequently
had enough time during class to help students understand difficult ideas.	☐	☐	☐	☐
felt pressured to go through material quickly to cover all the required topics.	☐	☐	☐	☐

24. During class time, how frequently did you:

	Not at all 1	2	3	4	5	Very often 6
show students how to work specific problems?	☐	☐	☐	☐	☐	☐
have students work with one another?	☐	☐	☐	☐	☐	☐
hold a whole-class discussion?	☐	☐	☐	☐	☐	☐
have students give presentations?	☐	☐	☐	☐	☐	☐
have students work individually on problems or tasks?	☐	☐	☐	☐	☐	☐
lecture?	☐	☐	☐	☐	☐	☐
ask questions?	☐	☐	☐	☐	☐	☐
ask students to explain their thinking?	☐	☐	☐	☐	☐	☐

25. How frequently did you:

	Not at all 1	2	3	4	5	Very often 6
prepare extra materials to help students understand calculus concepts or procedures?	☐	☐	☐	☐	☐	☐
require students to explain their thinking on assignments?	☐	☐	☐	☐	☐	☐
require students to explain their thinking on exams?	☐	☐	☐	☐	☐	☐
assign sections in the textbook for students to read before coming to class?	☐	☐	☐	☐	☐	☐

26. On a typical *assignment*, what percentage of the problems focused on:

Percentage

skills and methods for carrying out computations (e.g., methods of determining derivatives and antiderivatives)?	6
graphical interpretation of central ideas?	6
solving standard word problems?	6
solving complex or unfamiliar word problems?	6
proofs or justifications?	6

27. On a typical *exam*, what percentage of the points focused on:

Percentage

skills and methods for carrying out computations (e.g., methods of determining derivatives and antiderivatives)?	6
graphical interpretation of central ideas?	6
solving standard word problems?	6
solving complex or unfamiliar word problems?	6
proofs or justifications?	6

28. In a typical week, what percentage of students attended each class session?

29. Indicate the extent to which you agree or disagree with the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
All students in beginning calculus are capable of understanding the ideas of calculus.	jn	jn	jn	jn	jn	jn
Calculus students learn best from lectures, provided they are clear and well-organized.	jn	jn	jn	jn	jn	jn
It is the student's responsibility to address his or her deficiencies with prerequisites.	jn	jn	jn	jn	jn	jn
Understanding ideas in calculus typically comes after achieving procedural fluency.	jn	jn	jn	jn	jn	jn
If I had a choice, I would continue to teach calculus.	jn	jn	jn	jn	jn	jn
Familiarity with the research literature on how students think about ideas in calculus would be useful for teaching.	jn	jn	jn	jn	jn	jn

30. Enter the number of students who received the following grades in what you indicated in item 4 above was your first Calculus class. (If you only taught one section of Calculus I, enter your data for that section here.)

W/D

F

D

C (includes C- and C+)

B (includes B- and B+)

A (includes A- and A+)

31. Select YES to enter grade data for another class.

jn Yes

jn No

32. Enter the number of students who received the following grades in what you previously indicated was your second Calculus class.

W/D	
F	
D	
C (includes C- and C+)	
B (includes B- and B+)	
A (includes A- and A+)	

33. Select YES to enter grade data for another class.

- ○ Yes
- ○ No

34. Enter the number of students who received the following grades in what you previously indicated was your third Calculus class.

W/D

F

D

C (includes C- and C+)

B (includes B- and B+)

A (includes A- and A+)

35. Select YES to enter grade data for another class.

j͏n Yes

j͏n No

36. Enter the number of students who received the following grades in what you previously indicated was your fourth Calculus class.

W/D

F

D

C (includes C- and C+)

B (includes B- and B+)

A (includes A- and A+)

37. Select YES to enter grade data for another class.

jn Yes

jn No

38. Enter the number of students who received the following grades in what you previously indicated was your fifth Calculus class.

W/D

F

D

C (includes C- and C+)

B (includes B- and B+)

A (includes A- and A+)

Thank you for completing this survey. As the final step, we would like you to provide a copy of your final exam.

Please click the "Continue" button below, it will redirect you to the Final Exam Submission Page.