

## FORM E-1-A FOR BOSTON COLLEGE DEPARTMENTS/PROGRAMS

DEPARTMENT OF MATHEMATICS  
UNIVERSITY CORE  
2019

- 1) Have formal learning outcomes been developed? What are they? (What specific sets of skills and knowledge does the department expect students completing its Core courses to have acquired?)

In a Core course in Mathematics, students should :

- learn the nature of mathematical inquiry: abstraction and generalization;
- understand the power of mathematical reasoning to reach conclusions with assurance;
- communicate solutions clearly and effectively;
- study and appreciate applications of mathematics to other disciplines.

- 2) Where are these learning outcomes published? Be specific. (Where are the department's expected learning outcomes for its Core courses accessible: on the web, in the catalog, or in your department handouts?)

A statement of the department's commitment to assessing the success of our students, with descriptions of our goals, is available on the University Core website at

*[https://www.bc.edu/bc-web/schools/mcas/undergraduate/core-curriculum/core-requirements.html#1\\_course\\_in\\_mathematics](https://www.bc.edu/bc-web/schools/mcas/undergraduate/core-curriculum/core-requirements.html#1_course_in_mathematics).*

- 3) Other than GPA, what data/evidence is used to determine whether students have achieved the stated outcomes for the Core requirement? (What evidence and analytical approaches do you use to assess which of the student learning outcomes have been achieved more or less well?)

The department's procedure is to collect evidence in two ways, direct and indirect.

- (1) The Undergraduate Committee will periodically review final exams in specifically identified courses and rate carefully chosen problems with regard to the learning goals.
- (2) The Undergraduate Committee will review student evaluations for those identified courses. If possible, instructors will be asked to add extra questions, designed by the Committee, to directly address the learning goals.

- 4) Who interprets the evidence? What is the process? (Who in the department is responsible for interpreting the data and making recommendations for curriculum or assignment changes if appropriate? When does this occur?)

The department's Undergraduate Committee, chaired by the Assistant Chair for Undergraduates, is charged with assessment. The committee reviews the data described in item 3 during the fall semester, with the goal of recommendations to the full department in the spring.

- 5) What were the assessment results and what changes have been made as a result of using this data/evidence? (What were the major assessment findings? Have there been any recent changes to your curriculum or program? How did the assessment data contribute to those changes?)

(1) In September 2018, Professor Ellen Goldstein began coordinating all sections of *MATH1100/1 Calculus I/II*. Under her supervision, the instructors developed a syllabus to be used by all, and exams were common across all sections. The Undergraduate Committee will review the outcomes during AY 2020.

(2) Professor Juliana Belding is developing a revised curriculum for *MATH1001 Calculus I*, to make it more suitable for students not majoring in Mathematics, Physics, or Computer Science (those students should enroll in *MATH1103*). The Undergraduate Committee will consider it for implementation in Spring 2020.

(3) During AY2020, the Undergraduate Committee will review *Finite Probability and Applications*, one of two core courses intended for nonscience majors, with an eye to streamlining and improving our offerings for that audience. One option under consideration will be to merge that course with *MATH1107 Ideas in Mathematics*, simplifying and clarifying our catalogue.

- 6) Date of the most recent program review. (Your latest comprehensive departmental self-study and external review.)

The department conducted a self study in the Fall of 2007, which was followed by an external review on April 24-25, 2008.