

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

DEPARTMENT OF MATHEMATICS
UNIVERSITY CORE
2018

- 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>.

- 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?)

The department initiated one significant change in our largest Core course, MATH1100 Calculus I, effective in the fall of 2018 (19F).

This course consists of many sections in the fall, some large and some small, taught by both full time faculty and teaching fellows. While there has always been a common list of topics to be covered, the Undergraduate Committee determined that a stricter syllabus, with a common measure of achievement, would be beneficial both for students and for faculty teaching the course for the first time.

Beginning in September, Professor Ellen Goldstein will be coordinating the sixteen scheduled sections of MATH1100. Under her supervision, the instructors are developing a syllabus to be used by all, and exams will now be common across all sections. (Special evening times have been reserved for midterms; the final has always been scheduled that way.)

This structure will continue into MATH1101 Calculus II in the spring. During that semester, the Undergraduate Committee will review the fall outcomes.

- 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.