



Position Statement of the AMERICAN MATHEMATICAL ASSOCIATION OF TWO-YEAR COLLEGES on
Distance Education in College Mathematics in the First Two Years

1 For the purposes of this position statement, Distance Education (DE) shall be defined as follows:
2 “Education that uses one or more technologies to deliver instruction to students who are separated
3 from the instructor and to support regular and substantive interaction between the students and the
4 instructor synchronously or asynchronously.”¹

5 The American Mathematical Association of Two-Year Colleges (AMATYC) provides leadership in
6 improving mathematics education regardless of the delivery method. AMATYC’s *IMPACT* advocates for
7 increased student engagement to boost retention and provide more productive and successful online
8 learning environments.² Recognizing that DE mathematics courses are becoming more prevalent in the
9 first two years of college, institutions must maintain high standards and use research-based practices
10 when designing DE courses. To this purpose AMATYC makes the following recommendations.

11 **Planning, support, and maintenance**

12 While DE courses provide students with learning opportunities that may not have previously existed,
13 these courses may not be appropriate for all students nor all instructors.³

14 DE requires alternative teaching and learning methods. Special attention must be directed to the needs
15 and abilities of both students and faculty. Colleges should therefore provide the following:

- 16
- 17 ● Ongoing training and support for faculty and students as an integral part of the DE program.
 - 18 ● Proper infrastructure, including accessible testing centers and well-trained support staff for the
19 Learning Management System (LMS) and other DE-specific systems.
 - 20 ● Support for innovative tools and best practices.
 - 21 ● Equivalent supports for students in DE courses when compared to students in on-campus
22 courses.

22 **Expectations for students and instructors**

23 Students enrolled in DE mathematics courses should be active learners who are strongly motivated and
24 self-disciplined. They need to participate in class activities consistently, interact with the instructor and
25 other students regularly in a substantive way, and turn in course assignments on time. Communication
26 of these vital expectations is incumbent upon the instructor and the college.

¹ National Center for Education Statistics (NCES) (2018). *Digest of Education Statistics, 2016, Appendix B*. Washington, D.C.: NCES, https://nces.ed.gov/programs/digest/d16/app_b.asp#d.

² American Mathematical Association of Two-Year Colleges (AMATYC) (2018). *IMPACT: Improving Mathematical Prowess And College Teaching*. (Memphis, TN: AMATYC), 47.

³ Heather Kauffman, “A review of predictive factors of student success in and satisfaction with online learning,” *Research in Learning Technology*, 23: 26507 (August 2015), <http://dx.doi.org/10.3402/rlt.v23.26507>.

27 **Instructional design**

28 Course design should be informed by a wide variety of resources and best practices for DE. Well-
29 designed DE mathematics courses will have these attributes:

- 30 ● The course design addresses established course competencies with appropriate quality and
31 mathematical rigor.⁴
- 32 ● Course objectives and instructor expectations are clearly communicated.⁵
- 33 ● Assessments measure student achievement of the learning objectives.⁶
- 34 ● A variety of activities and instructional materials promote frequent and substantive engagement
35 with the content, other students, and faculty.
- 36 ● Consideration is given as to how the course tools and activities support the learning objectives.

37 **Access and Equity**

38 Since mathematics is an integral part of so many programs of study, it is especially important that all
39 students who could benefit from distance education opportunities in mathematics have access to them.

40 Efforts should be made to maximize student access to DE mathematics courses and all such courses
41 should be ADA compliant to ensure they are fully accessible to all students enrolled in the course.

42 **Standards and Integrity**

43 Mathematical thinking and processes aid in the problem-solving skills needed for success in many
44 programs and disciplines. To this end, DE courses must maintain the same rigor and scope of work as
45 mathematics courses of the same title, regardless of delivery format. Security measures such as the
46 proctoring of exams, as outlined in the AMATYC Position Statement on Proctored Testing for Courses
47 Taught at a Distance,⁷ should be implemented.

⁴ Quality Matters (QM) (2015). *Course Design Rubric Standards, 2nd edition*. Annapolis, MD: QM.

⁵ Quality Matters.

⁶ Quality Matters.

⁷ American Mathematical Association of Two-Year Colleges (AMATYC) (2012). *Position Statement: Proctored Testing for Courses Taught at a Distance*. Memphis, TN: AMATYC.



References

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