Math Education

Major Field Assessment

Math Education Program:

The Bachelor of Science in Mathematics Education with a minor in K-12 Educational Technology prepares 7-12 Mathematics teachers for the demands of the modern 7-12 mathematics classroom and overall school environment. Faculty members teaching in the major have a variety of experiences in both secondary and higher education, along with experience in utilizing technology tools in the classroom. The faculty has been active in their disciplines and continue to contribute professionally through leadership and membership within professional associations, active support of institutional and professional service demands, and through scholarship (presentations and publications) and creative activity. The support of faculty members in the College of Business and Information Systems and the College of Education enhances the Mathematics Education program through courses in computer science, information systems and educational technology that constitute the K-12 Educational Technology minor. Strong relationships with public schools in the area enhance the curriculum and offer numerous opportunities for teacher candidate involvement. The institutional mission to integrate technology throughout the curriculum has provided the Mathematics Education program with both incentives and opportunities to prepare our future teachers with a sound foundation in making creative and instructionally sound decisions regarding technology and its use in the classroom.

Standards for admission into the Math Education Program:

Admission to the math education program requires a formal application to the Student Assessment and Monitoring Committee (SAM) and is contingent upon successful completion of the following: 1) attend an ‘Admission to Teacher Education Orientation’ session; 2) completion of the following general education courses with a grade of “C” or better: ENGL/HON 101 Composition; SPCM 101 Fundamentals of Speech; and MATH 102 College Algebra or higher level math course; 3) completion of the following pre-professional, Level I courses with a grade of “C” or better: EDFN 338 Foundations of American Education; EPSY 302 Educational Psychology; and SPED 100 Introduction to Persons with Exceptionalities; 4) achieve a cumulative grade point average of 2.6 or better with a minimum of 32 credit hours; 5) achieve passing scores on the Praxis I Academic Skills for Educators (CORE) in reading, writing and mathematics; 6) successfully complete 30 hours of community service; 7) submit two faculty recommendations; 8) submit an electronic portfolio; and 9) successfully complete an entry-level candidate interview conducted by one faculty member and an upper-level education student.

Retention in the Math Education Program and Admission to Student Teaching:

All teacher candidates are monitored throughout their program in course work, field experiences, and advising to maintain established standards for grade point average, professional attitudes and basic skills. Students are required to maintain at least a grade of C in any course leading to certification; if a grade of C is not achieved, the student must retake the course. A cumulative grade point average of 2.6 overall and 2.7 in major content courses must be maintained. Students must achieve a passing score for the Praxis Math Content Exam and must successfully complete their Level II and Level III Field Experiences. Candidates must have their Program Evaluation Plan of Study (math education check sheet) verified by the Director of Field Services and successfully meet the requirements for the Admission to Student Teaching Electronic Portfolio. Candidates are again assessed on dispositional information using the College of Education online Dispositions Survey; at this point candidates complete a self-evaluation and evaluations are completed by the candidate’s Level III cooperating teacher and university supervisor.
Graduation from the Math Education Program:

To graduate from the program, candidates must complete all major and professional sequence requirements as well as 1) complete the student teaching requirements with a rating of 2 (Proficient) or better (scale of 0-3). At approximately five weeks into the student teaching experience, the Student Teacher Assessment Form 'Midpoint in Placement' is completed by the cooperating teacher and confirmed by the university supervisor. If areas of concern are noted at this point, the Director of Field Services becomes involved and a Professional Development Plan for Field Experiences is completed; 2) receive a rating of 2 or better (on a scale of 0 – 3) on their Teaching Work Sample unit based on ratings by the university supervisor and the cooperating teacher; 3) maintain a cumulative grade point average of 2.6 (on a 4.0 scale) overall and a grade point average of 2.7 in major content courses; 4) receive a rating of 2 or higher (scale of 0-3) on their exit portfolio which is reviewed by two faculty members; 5) successfully pass the Praxis II: Principles of Learning and Teaching (PLT) 7 - 12, which is the South Dakota certification pedagogy exam; and 6) complete the College of Education Exit Survey. These assessment criteria are designed to assure that teacher candidates have mastered the content and pedagogical objectives of their programs and can successfully deliver quality instruction to impact student learning. The candidates’ performance on these assessments enables the professional education faculty to make a recommendation to the Director of Field Services on whether the candidate should be recommended for certification.

South Dakota Licensure Requirements:

In compliance with ARSD 24:53:04:07, Regental teacher education programs are required to measure candidates’ content and pedagogical knowledge with the South Dakota state certification exams before graduation or program completion. Teacher education candidates must achieve the qualifying score for the South Dakota certification content exam (Praxis II Content Exam) for their major(s) level of preparation prior to beginning student teaching. The Praxis Mathematics Content Knowledge test is designed to assess the mathematical knowledge and competencies necessary for a beginning teacher of secondary school mathematics and is thus the foundational, direct assessment of the math education program. During the student teaching semester, teacher education candidates must also achieve the qualifying score on the Praxis II: Principles of Learning and Teaching (PLT), which is the South Dakota state certification pedagogy exam.

Math Education Program Goal Statement:

Graduates of the program will have the mathematical, pedagogical, and technological knowledge and skills to teach at the middle and secondary school levels.

Math Education graduate will:

1. Have the content knowledge to teach mathematics at the middle and high school levels.
   a. Graduates will have the mathematical content knowledge to be high school mathematics teachers.
      1) Course Grades: 90% of graduates will successfully complete upper division coursework in mathematics with a minimum grade of C in each course.
      2) Minimum GPA in Major Field: 100% will have a min. GPA of 2.6 in mathematics courses.
3) Student Teacher Assessment Form: 100% will score at or above the Proficient Level in the Knowledge category. (The Average of items in the Knowledge Category is greater than or equal to the proficient rating which is 2.)

4) Praxis II Content Exam (Exam 5161): 90% will score at or above the SD state standard for certification as a mathematics teacher in the state of SD within the first three attempts of taking the exam (at least 160 out of 200).

5) Exit Interview: 90% of graduates will indicate that they are satisfied that they have the content knowledge to teach mathematics at the high school level.

6) DSU Math Education Exit Exam – 90% of graduates will demonstrate at least partial command (level 2 or higher) in all seven categories and sufficient or deep command (level 3 or 4) in at least four of the seven categories. The Math Education exit exam is evaluated by at least two of the tenure track math faculty on staff and the maximum value for each target is recorded.

b. Graduates will think logically and be experienced problem solvers.

1) Exit Interview: 90% will indicate that they are satisfied with their problem solving skills.

2) Employer Survey: 90% of employers will be satisfied with graduates ability to solve problems. (Average of questions 8 and 9)

2. Have the pedagogical knowledge and skills to teach mathematics at the middle and high school levels.

a. Graduates will have the pedagogical knowledge to be high school or middle school mathematics teachers.

1) Course Grades: 100% of graduates will successfully complete COE coursework with a minimum grade of C in each course.

2) Minimum GPA in Education Course Work: 100% of graduates will have a min. GPA of 2.6 in educational courses.

3) Student Teacher Assessment Form: 100% of graduates will score at or above the Proficient Level in the Instruction and Assessment category. (The Average of items in the Instruction and Assessment Category is greater than or equal to the proficient rating which is 2.)

4) Praxis Pedagogy Exam (Praxis II PLT Exam): 90% of graduates will score at or above the SD state standard for certification on their first attempt.
5) Exit Interview: 90% of graduates will indicate that they are satisfied that they have the pedagogical knowledge and skills to teach at the high school level.

b. Graduates will be prepared to manage their own classroom.

1) Student Teaching Assessment Form: 100% will score at or above the Proficient Level in the Managing the Environment category. (The Average of items in the Managing the Environment Category is greater than or equal to the proficient rating which is 2.)

2) Course Grades – graduates will take Seed 440 and earn a course grade of B or better.

3. Have a high degree of proficiency in the use of computer technology.

a. Graduates will have technology expertise.

1) 90% of graduates will successfully complete the coursework for the built in K-12 Educational Technology minor with a minimum grade of C in each course.

2) Minimum GPA in Minor Field: 100% will have a min. GPA of 2.6 in technology courses required in the major.

3) DSU Technology Exam: 90% will score above one standard deviation below the mean for the DSU campus.

b. Graduates will be able to successfully use technology in the classroom, including the ability to teach in a laptop environment.

1) Exit Interview: 90% of graduates will indicate that they are satisfied that they have the technology skills and computer knowledge to teach in a laptop school.

2) Graduate Survey: 90% of graduates will be satisfied with their technology preparation in the program. (Average of questions 1 and 4)

3) Employer Survey: 90% of employers will be satisfied with the technology preparation of the graduate. (Average of questions 1 through 3)

4. communicate effectively.

a. Graduates can effectively communicate information in writing.

1) Graduate Survey: 90% of graduates will indicate that they are satisfied with their written communication skills. (Question 5)
2) Employer Survey: 90% of employers will indicate that the graduate has adequate to very good writing skills as they relate to the graduate’s position. (Question 4)

b. Graduates are effective speakers communicating information to a variety of audiences (students, parents, administrators, …).

   1) Exit Interview: 90% of graduates will be satisfied with their ability to be effective speakers communicating information to a variety of audiences.

   2) Graduate Survey: 90% of graduates will be satisfied with their oral communication skills. (Question 6)

   3) Employer Survey: 90% of employers will be satisfied with the oral communication skills of the graduate. (Question 5)

c. Graduates are effective online communicators (email, home page, school site, …).

   1) Portfolio: 100% of graduates will complete the college of education’s electronic portfolio at an acceptable level.

   2) Exit Interview: 90% of graduates will be satisfied with their ability to communicate online.

d. Graduates have solid social skills.

   1) Graduate Survey: 90% of graduates will be satisfied with their interpersonal skills. (Question 8)

   2) Employer Survey: 90% of employers will be satisfied with the interpersonal skills of graduates from the program. (Question 7)