Mayville State University

Math 480 Mathematics Comprehensive Syllabus

(Online 27557) Fall 2025
1 Credit Hour

Course and Instructor Information

Instructor Name: Mary Townsend

Contact Information:

Office: Classroom Building 108A
Email: mary.townsend@mayvillestate.edu
Work phone: 701-788-4672

Hours of Availability:

Monday, Wednesday: noon to 12:50 p.m. on campus

Also available for meetings on other days (including weekends) and times by appointment.

Office Hours Meeting Link: https://mayvillestate.zoom.us/j/89626410446

Instructional Mode: Online asynchronous **Course Dates:** August 25 – December 19. 2025

Time Zone: All times indicated throughout this syllabus reflect Central Time (CT).

Meeting Times and/or Location: By appointment by zoom

Final Exam Time and Location: To be arranged by student with instructor and proctor

Zoom or Teams Link: https://mayvillestate.zoom.us/j/86469860139

Course Materials and Technologies

No text is necessary for this course; however, Open Educational Resources (OERs) are provided in the Blackboard course shell. Review materials and the exam will be posted on Blackboard so computer access is needed. Access to library resources is necessary. NOTE: The review materials also consist of the notes and handouts you have from each of the courses taken for the mathematics degree.

Technologies available for the comprehensive exam are a graphing and/or scientific calculator. Notes for the exam must be printed (not online). Technologies available to students as they study and prepare for the exam include a graphing and/or scientific calculator, online software including:

- https://www.khanacademy.org/
- https://www.mathsisfun.com/
- https://www.myopenmath.com/
- https://www.purplemath.com/
- https://www.wolframalpha.com/
- https://www.desmos.com/calculator
- https://www.geogebra.org/graphing?lang=en
- https://www.numworks.com/simulator/

Required

MSU Technology Requirements

Recommended

Students should use their notes, prior exams, and text books from their prior coursework. It is helpful to also use the myOpenMath software to review problems from each of the 11 content areas.

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Use of Artificial Intelligence in this Course

AI tools may be used in this course if their purpose is to support your learning. The goal is always your own understanding, not just getting an answer. If you choose to use AI, treat its output as a starting point or building block—not a final product. Always aim to understand, question, and build upon what AI provides so that your own mathematical thinking and teaching skills continue to grow.

I suggest you use AI to help you find scholarly articles as you research the topic of your final paper. Be careful to ensure the accuracy of the suggestions! Download the actual articles and double-check that the information is valid.

Course Description

This course fulfills LEAP requirements and must be completed through Mayville State University. A comprehensive review and examination covering the content of the courses required for the mathematics education major and the mathematics major. Students will read comprehensive math review materials, identify additional materials, and organize course materials. By studying all the materials and completing the exam, students will demonstrate their use of critical thinking, mastery of basic math principles, and computational skills. The researching and writing of a research paper will show how mathematical ideas have been discovered by diverse cultures and impacted historical events from early to present times.

Pre-/Co-requisites: Students must have completed all (or most) of the coursework for the major. It is permissible to take the course if you have at most one more required course to take for the major. Courses include: Math 103 College Algebra (pre-requisite), Math 105 Trigonometry, Math 165 Calculus I, Math 166 Calculus II, Math 265 Calculus III, Math 323 Probability and Statistics, Math 389 Geometry, Math 412 Differential Equations, Math 420 History and Philosophy of Mathematics, Math 435 Theory of Numbers, Math 443 Algebraic Structures with Programming,

Course Objectives

To successfully complete this course, the learner will be expected to meet the following objectives, as aligned to Mathematics Education Program Approval Standards through North Dakota's Education Standards and Practices Board (ND ESPB):

- Insert course objectives

Standards Alignment (Mathematics Education Program Approval Standards-ND ESPB):

- 11010.7 Content Pedagogy: The program requires that the teacher candidate is able to successfully implement a variety of instructional strategies. The candidate demonstrates the following: a) Applies knowledge of curriculum standards for secondary mathematics and their relationship to student learning within and across mathematical domains, b) Analyzes and considers research in planning for and leading students in rich mathematical learning experiences, c) Plans lessons and units that incorporate a variety of strategies and mathematics specific instructional tools to promote conceptual understanding and procedural proficiency, d) Provides students with opportunities to communicate about mathematics and make connections among mathematics, other content areas, everyday life, and the workplace, e) Implements techniques related to student engagement and communication including selecting high quality tasks, guiding mathematical discussions,

identifying key mathematical ideas, identifying and addressing student misconceptions, and employing a range of questioning strategies

The objective of this course is to document the skills and knowledge that have been acquired while completing a mathematics degree. The student will review and pass a comprehensive examination developed by the Mathematics Department of Mayville State University and complete a research paper including mathematical ideas that show their ability to connect with math from the past.

Students will be able to show through completion of the departmental comprehensive test at a passing rate of at least 60% on each subtest that they can solve problems concerning the main aspects of all the areas of mathematics.

Course Expectations

1. Since students are allowed to use course notes/handouts that you have from each course when taking the final exam, it is important to organize notes and handouts prior to the exam and practice problems from each area.
2. Students are expected to contact the instructor to set up an exam date/time when they feel they are ready to take the comprehensive exam.
3. Students will submit a planning journal with research topic due Monday, September 10 to communicate with the instructor their plan to complete their research and study for the comprehensive final exam.
4. Students will receive feedback on their work at the conference times set up for student/instructor discussions.
5. Students will submit both course components on or before their due dates:
   Research Paper: Monday, November 24, 2025 (before Thanksgiving)
   Proctored Exam: Friday, December 5, 2025.
6. Instructor feedback will be given as work is completed and submitted for grading. Typically feedback is given within 48 hours.
7. A zoom meeting with Professor Townsend must be completed by Monday, October 6 after receiving feedback from the Writing Center on the first submission of the research paper.
8. A second zoom meeting with Professor Townsend must be completed by Monday, November 3 after receiving feedback from the Writing Center on the rough draft submission of the research paper.
9. An assessment questionnaire must be completed after both course components are submitted.
   Questionnaire: Monday, December 15, 2025.

Instructor/Student Communication

Students are accountable for all academic communications sent to their Mayville State University email address. Students are encouraged to communicate by e-mail they submit work early and/or request an extension on a deadline.

Graded Assignments and Assessments

Research Paper: Monday, November 24, 2025 (before Thanksgiving)
Proctored Exam: Friday, December 5, 2025
Assessment Questionnaire: Monday, December 15, 2025

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Evaluation and Grading

Students may submit rough drafts of their paper to the discussion board in Blackboard. Please try to submit before the deadline so you have time to revise. I would like you to submit your draft to the writing center at least twice before your final submission of the paper. Students can expect feedback within 48 hours of submission. If students want more immediate feedback, please submit the new draft by e-mail as well as in Blackboard.

Students need to prepare for a comprehensive final exam. They may e-mail Professor Townsend to schedule zoom meetings to discuss various topics as they review. There are review problems in the myOpenMath section for this course.

Grading Policies

To pass this course, you must pass all sections of the final exam. If you do not score at least 3 correct questions on each section of the final exam, you may review the content for that section and retake that section of the exam. If you answered two questions correctly, you will be given 3 questions to complete. If your attempt is unsuccessful, you will be required to do practice problems related to the content of the missed questions and meet with Professor Townsend to discuss your work on the practice problems and the missed questions from the final exam. You will then be allowed to retake the section.

Attendance/Participation Policies

I will expect communication if an extension is needed, but there are no attendance requirements in this course.

Grading Scale

90^{+} A 80 – 89.9 B 70 – 79.9 C 60 – 69.9 D < 60 F

Breakdown of Grades

To earn a passing grade in this course, students must pass all sections of the final exam with at least 60% on each section, submit a completed assessment questionnaire, and earn at least 60% on the final paper.

- To earn an A in the course, your paper must also be at least 90%.
- To earn a B in the course, your paper must also be at least 80%.
- To earn a C in the course, your paper must also be at least 70%.
- To pass the course with a D, your paper must also be at least 60%.
- If you fail to pass all sections of the final exam (including the retaking of the sections that you missed), you will not pass the course regardless of your score on the paper. If your paper is not at least 60%, you will not pass the course.
- If you do not complete the questionnaire at the end of the course, a full letter grade will be the deduction.

Enrollment Verification

The enrollment verification activity for Math 480 is to complete the syllabus quiz in Blackboard. It is due on Friday, 8/29/2025.

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Online Course Statement

The U.S. Department of Education requires instructors of online courses to provide an activity which will validate student enrollment in this course. The only way to verify that a student has been in this course is if he, she, or they perform an action in the LMS, such as completing an assignment or taking a quiz. Logging into the LMS is **NOT** considered active course participation. Please complete the designated enrollment verification activity by the date indicated. If it is not complete your enrollment in this course will be at risk.

Proctor Notification

A proctor is required for the comprehensive final exam, which is a paper/pencil examination with 11 sections (one for each mathematics course required for the major) with 5 multiple choice questions. The exam must be taken in one sitting. Students may opt to use a proctor in their community or schedule to zoom with the instructor.

Important Student Information

In the Help & Resources for Students section of the Blackboard Institution Page, you can view and download the Important Student Information document for the current academic year. It includes information about:

- ✓ Land Acknowledgement Statement
- ✓ Academic Grievance Concerns and Instructor English Proficiency
- ✓ NetTutor - Online Tutoring Program
- ✓ Starfish - Student Success System
- ✓ Students with Documented Disabilities
- ✓ Student Learning Outcomes / Essential Learning Outcomes
- ✓ Academic Honesty
- ✓ Emergency Notification
- ✓ Continuity of Academic Instruction for a Pandemic or Emergency
- ✓ Family Educational Rights and Privacy Act of 1974 (FERPA)
- ✓ Diversity Statement (Title IX)

Course Timeline/Schedule

The important dates to remember:

1. Submit your research paper topic idea or title and planning journal by Monday, September 10.
2. Submit your research paper to the writing center at least twice before the final submission.
3. Your completed research paper is due on Monday, November 24 (before Thanksgiving).
4. Complete the comprehensive exam during the last 3-4 weeks of the semester (or when you feel ready). This is due Friday, December 5.
5. Complete a course questionnaire after both components are complete (due by Monday, December 15).

Course Timeline and Schedule are subject to change as deemed necessary by the instructor.