DAKOTA COLLEGE AT BOTTINEAU

COURSE SYLLABUS

Course Prefix/Number/Title: MATH 278 Math for Elementary Teachers II

Number of Credits: 2

Course Description: A mathematics content course for prospective elementary school teachers that integrates the understanding of content and development of processes. Topics include real numbers, algebraic thinking, functions, probability, statistics/data analysis, geometry, and linear measure (unit analysis).

Pre-/Co-requisites: EDUC/MATH 277 Mathematics for Elementary Teachers I

Course Objectives: The student will be able to:

1. Demonstrate an understanding of the mathematical concepts taught at the elementary and middle school level.
2. Communicate to others an understanding of middle school – level mathematics by writing reflections and by explaining strategies and steps used in problem solving.
3. Use manipulatives and models to demonstrate and explain the mathematical processes used in problem solving.
4. Utilize many distinct problem-solving strategies.
5. Demonstrate an understanding of developmental processes in learning mathematics through the selection of age-appropriate strategies.

Instructor: Harmony Richman, M.Ed.

Office: McFarland 427C on the Valley City State University campus

Office Hours: Virtual office hours are available via Microsoft Teams, Zoom or Facetime (harmony.richman@vcsu.edu)

Phone: 701-200-3897 (cell - preferred)

Email: Harmony.Richman@vcsu.edu

Lecture/Lab Schedule: Online Asynchronous

Textbook(s): All are Open Educational Resources (OER) at no cost

- "CK-12 Interactive Middle School Math 6." *CK-12*
- "CK-12 Interactive Middle School Math 7." *CK-12*
- "CK-12 Interactive Middle School Math 8." *CK-12*
- Tanton, Dr. James. "Arithmetic, Algebra, and Radical Comprehension of Math." G'Day Math
- Recommended Textbook: Manes, M. (2017) Mathematics for Elementary Teachers. CC BY-SA 4.0.

Technology tools required: Internet access which is regular and dependable. Internet browser (Firefox or Google Chrome preference), Office 365, Adobe Acrobat Reading, Adobe Flash Player, ability to record audio and/or video, additional free web-based software.

Course Requirements: Students who are in the college classroom either face-to-face or online have made the conscious choice to be a part of the course. In this course, you are viewed as a participant in the learning; hence there are expectations that come with the choice you made to take this course.

1. This course does not have standard class meeting time; students are expected to dedicate at least 300-450 minutes of total time on tasks per week that may include activities such as: reading, reviewing class lessons with notes, choice boards, additional research, final project, and Khan Academy. *Course tasks and time are estimated based on time and effort needed by the typical student to successfully complete each of the learning activities in the course.* Occasionally a reading or research assignment may take longer.
2. Actively participate regularly in class discussions through consistent, punctual, prepared and interested participation.
3. Submit graded assignments by dates posted on the bi-weekly course schedule. It is unfair to selectively grant extensions to some students and not others. Therefore, late assignments are not accepted. Addendums to this rule may be taken into consideration with prior approval requesting a modified due date from the instructor before the due date of an assignment.
4. On each assignment submitted, you must show ALL YOUR WORK for full credit. If you do not show work, but simply state your answer, you will receive NO credit for the assignment.
5. A zero will be given for any assignment not turned in by the deadline.
    a. If you are experiencing any problems (family difficulties, sick relatives, etc.) that are affecting your academic performance, you must inform me of such problems ASAP if you want me to take them into consideration. The sooner I know about a problem, the more understanding I will be. If you come to me during the last week of the semester, before grades are about to be posted to discuss difficulties which have affected you throughout the term, you will find that I am not nearly as understanding, and I can do very little to help you with your grade.
    b. If you are personally experiencing health or family difficulties that are short or long term (medication changes, health concerns, etc) which are affecting your ability to turn assignments in on time, it is highly recommended to reach out to Student Academic Services who can help with outreach services (temporary or otherwise).
    c. If you are currently serving or have served in our military, your instructor appreciates the important contributions you have made. If you are called to serve or attend training you must let your instructor know immediately such that reasonable accommodations for instruction and assignments can be agreed upon ahead of your leave.
6. Do ungraded, independent practice exercises, as needed.
7. Read assignments as provided by the instructor.
8. Use manipulatives to show how to work through North Dakota State Math Content Standards in grades 6-8.
9. This course is NOT a course on how to teach mathematics, but rather a course on developing a strong foundation on how to do mathematics as students will encounter in grades 6 –8. A math methods course such as EDUC 315 Mathematics in Elementary School will focus on planning, implementing and evaluating lesson plans for mathematics

Tentative Course Outline: See Table 1 Course Schedule below.

General Education Competency/Learning Outcome(s) OR CTE Competency/Department Learning Outcome(s):

North Dakota State Standards Mathematics: 50015.2c

Relationship to Campus Theme: This course is a core requirement of the paraeducation Program, a program that requires knowledge of human nature and learning, utilization of computer equipment and other media to create lessons and deliver instruction and understanding of the role of paraprofessionals in education.

Classroom Policies:

1) Our class "week" runs Saturday starting at 12:00AM through Friday at 11:59 PM.
2) Due dates for all assignments will be given throughout the duration of this course. Sufficient notice of due dates for assignments will be given, there is no reason why the assignments cannot be completed on time.
3) Your final grade is determined by dividing the total points earned by the total points possible. Points will be awarded for thoughtful posts of discussion boards, selected practice activities, reflections, and written reports. There will be no quizzes or tests within the course as there are formal and informal assessments within your assignments that fully allows me to analyze your understanding of our topics weekly.
    a) Your grade will be assessed on the following: Bi-Weekly learning menus, Khan Academy grade level proficiency, and semester project.
4) Grades will be calculated using the following criteria:

A	93% - 100%
B	92% - 85%
C	84% - 77%
D	76% - 70%
F	$\leq$ 69%

Student Email Policy: Dakota College at Bottineau is increasingly dependent upon email as an official form of communication. A student's campus-assigned email address will be the only one recognized by the Campus for official mailings. The liability for missing or not acting upon important information conveyed via campus email rests with the student.

Academic Integrity:

- According to the DCB Student Handbook, students are responsible for submitting their own work. Students who cooperate on oral or written examinations or work without authorization share the responsibility for violation of academic principles, and the students are subject to disciplinary action even when one of the students is not enrolled in the course where the violation occurred. The Code detailed in the Academic Honesty/Dishonesty section of the Student Handbook will serve as the guideline for cases where cheating, plagiarism or other academic improprieties have occurred.
- All work submitted in this course must be your own. When including information obtained from any external source, including Artificial Intelligence sources, you are expected to quote and cite that source accurately. Failure to cite sources accordingly will constitute academic

dishonesty. For any use of artificial intelligence tools, the citation must include the "conversation" between student and tool in its entirety

Disabilities or Special Needs: Students with disabilities or special needs (academic or otherwise) are encouraged to contact the instructor and Disability Support Services.

Accessibility: Blackboard Ultra will be utilized as our main Learning Management system throughout the entire course and is used throughout the North Dakota University System. Accessibility features can be found on the Blackboard Learn link. A list of Math for Elementary Teachers II course specific technology accessibility statements can be found within our Blackboard course.

Title IX: Dakota College at Bottineau (DCB) faculty are committed to helping create a safe learning environment for all students and for the College as a whole. Please be aware that all DCB employees (other than those designated as confidential resources such as advocates, counselors, clergy and healthcare providers) are required to report information about such discrimination and harassment to the College Title IX Coordinator. This means that if a student tells a faculty member about a situation of sexual harassment or sexual violence, or other related misconduct, the faculty member must share that information with the College's Title IX Coordinator. Students wishing to speak to a confidential employee who does not have this reporting responsibility can find a list of resources on the DCB Title IX webpage.

Use of Artificial Intelligence (AI)

Use of generative AI tools (e.g., ChatGPT, Google Gemini, etc) are encouraged during some assignments in this course. Learning to use AI appropriately and professionally is an important skill and I will provide tutorials and guidance as you develop these skills. Some things to note:

- Results obtained from generative AI tools depend on multiple factors including the tool chosen and the quality of the prompt provided. Learning to create high-quality prompts is a skill that will take time to develop.
- You should not trust everything AI tools generate; a good practice is to assume AI-generated content is incorrect until you have verified it with another reliable source. You will be responsible for any errors in your submitted work, so it is critical that you take the time to validate that information.
- You must cite AI tools when you use them. In addition to in-text citations, you should include a paragraph explaining which tool you used and how you used it on each assignment. Failure to include proper citations or explanations is a form of academic dishonesty.
- Only use AI tools when appropriate and necessary. Learning when use of AI tools is beneficial and when it is problematic is a skill, I hope to help you develop in this course.

Table 1 Course Schedule

The Topics and Readings with Assignments are subject to change based on learners, weather, and other components that are unable to be identified before the semester begins. Refer to Blackboard for official due dates.

Dates	Topics	Tasks/Readings	Major Assignments and Due Dates
Weeks 1 and 2 January 13th - January 24th	• 6th Grade Number and Operations • 6th Grade Algebraic Reasoning	• Course Introduction • Semester Project Review • Introduce Yourself • Readings for 6th Grade • Sign up for Khan Academy • Begin working on 6th Grade Khan Academy • Readings for 6th Grade Part A • Complete Learning Menu #1	• Syllabus Quiz due by January 17th at 11:59 PM • Learning Menu #1 due by January 24th at 11:59 PM • Semester Project due by April 24th at 11:59 PM • Khan Academy Grade 6 Proficiency due February 21st at 11:59 PM
3 and 4 January 25th - February 7th	• 6th Grade Geometry and Measure-ment • 6th Grade Data, Probability and Statistics	• Continue working on 6th Grade Khan Academy • Readings for 6th Grade Part B • Complete Learning Menu #2	• Learning Menu #2 due by February 7th at 11:59 PM
5 and 6	• 7th Grade Number and Operations	• Finish 6th Grade Khan Academy Proficiency	• Learning Menu #3 due by February 21st at 11:59 PM

February 8th - February 21st		• Begin 7th Grade Khan Academy Proficiency • Readings for 7th Grade Part A • Complete Learning Menu #3	• Khan Academy Grade 7 Proficiency due March 28th at 11:59 PM
7 and 8 February 22nd - March 7th	• 7th Grade Algebraic Reasoning	• Continue Working on 7th Grade • Readings for 7th Grade Part B • Complete Learning Menu #4	• Learning Menu #4 due by March 7th at 11:59 PM
March 8th - March 14th		Spring Break!	
9 and 10 March 15th - March 28th	• 7th Grade Geometry and Measure-ment • 7th Grade Data, Probability and Statistics	• Finish working on 7th Grade • Readings for 7th Grade Part C • Complete Learning Menu #5	• Learning Menu #5 due by March 28th at 11:59 PM • Khan Academy 8th Grade Proficiency due by May 9th at 11:59 PM
11 and 12 March 29th - April 11th	• 8th Grade Number and Operations • 8th Grade Algebraic Reasoning	• Begin working on 8th Grade • Readings for 8th Grade Part A • Complete Learning Menu #6	• Learning Menu #6 due by April 11th at 11:59 PM
13 and 14			

April 12th - April 25th	• 8th Grade Algebraic Reasoning • 8th Grade Geometry and Measure-ment	• Continue working on 8th Grade • Readings for 8th Grade Part B • Complete Learning Menu #7 • Submit your Semester Project	• Learning Meu #7 due by April 25th at 11:59 PM
15 and 16 April 25th - May 9th	• 8th Grade Geometry and Measure-ment • 8th Grade Data, Probability and Statistics	• Finish working on 8th Grade • Readings for 8th Grade Part C • Complete Learning Menu #8 • Peer Review of Semester Project	• Learning Menu #8 due by May 9th at 11:59 PM • Peer Review classmate Semester Project due by May 9th at 11:59 PM