MATH 277 Math for Elementary Teachers I
Instructor: Dr. Louella Aronson, PhD
Semester/Year: Spring 2013
Dakota College at Bottineau

Course Syllabus

Keep this syllabus for reference throughout the semester

Course Title: Math for Elementary Teachers I	**Instructor: Dr. Louella Aronson, PhD**
Course Prefix/Number: MATH 277	**Office: Virtual**
Class Location: Online	**Office Hours: Available upon request**
Lecture/Lab Schedule:	**Instructor Contact Information:** *Phone: Office 701-224-2433* *Email: Louella.aronson@dickinsonstate.edu* *Other:*
Credits: 3	
Pre-/Co-requisites: None	

Course Description: A mathematics content course for prospective elementary school teachers. Topics include: problem-solving, numeration systems, real numbers and elementary number theory. Calculators, computers and manipulatives are used in the course.

Relationship to Campus Theme: The purpose of the Education and Human Development Discipline is to educate students for careers as paraeducators, teachers, early childhood professionals and adult caregivers. The discipline provides coursework which transitions to higher degrees and work-related skills. Programs must prepare professionals based on industry standards and provide an educational continuum for degree advancement. Dakota College at Bottineau is committed to a hands-on learning environment and uses field experiences in educational settings as common instructional techniques.

Goals/Objectives: Upon completion for this course, student will be able to:

- Demonstrate an understanding of the mathematical concepts taught at the elementary level
- Communicate to others an understanding of elementary-level mathematics by writing reflections on methods of teaching and by explaining strategies and steps used in problem-solving
- Use manipulatives and models to demonstrate and explain the mathematical processes used in problem-solving
- Utilize many distinct problem solving strategies
- Demonstrate an understanding of developmental processes in learning mathematics through the selection of age-appropriate strategies

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Student Outcomes:

The student will demonstrate knowledge of the:	*CEC Standard*	Evidence/Criteria
Basic instructional and remedial strategies and materials	SEP4K1	Math Activities; Textbook Problems; Online Problems
Personal cultural biases and differences that affect one's ability to work with others	SEP9K2	Project #1, 2
The student will have the ability to:	*CEC Standard*	Evidence/Criteria
Use strategies, equipment, materials and technologies, as directed, to accomplish instructional objectives	SEP4S1	Math Activities; Textbook Problems; Online Problems; Project #1, 2
Establish and maintain rapport with learners	SEP5S1	Project #1, 2
Follow written plans, seeking clarification as needed	SEP7S1	Project #1, 2
Prepare and organize materials to support teaching and learning as directed	SEP7S2	Project #1, 2
Demonstrate problem-solving, flexible thinking, conflict management techniques and analysis of personal strengths and preferences	SEP9S3	Discussion #1, 2, 3
Demonstrate commitment to assisting learners in achieving their highest potential	SEP9S5	Project #1, 2
Foster respectful and beneficial relationships	SEP10S3	Project #1, 2

CEC Standards SEP9S7-SEP9S13 are embedded in all coursework and practicum.

Required Textbooks and Materials:

Bennett, A., &Nelson, L. (2011). *Mathematics for elementary teachers: A conceptual approach with manipulative kit* (9th ed.). New York: McGraw-Hill.

Course Requirements:

Description of Assignment/Assessment	CEC Standard	Points Possible	Points Received
Math Activities: Each section covered has a graded math activity. Manipulatives are helpful in completing this work.	SEP4K1, SEP4S1		
Textbook Problems: Some of the graded work involves completing problems from the textbook. These assignments require you to make drawings, charts, tables, illustrations etc.	SEP4K1, SEP4S1		
Online Problems: Each section has an online assignment with problems similar to those in the Graded Textbook Assignment from the textbook and related online practice exercise.	SEP4K1, SEP4S1		
Discussion: Students are expected to respond to discussion topics given by the instructor.	SEP9S3		

Project Reports: Two projects are to be completed. Project Report #1 requires students to report experience working with an elementary school child in grades 2-3. Project Report #2 requires students to report on experience working with an elementary school child in grades 5-6.	SEP9K2,SEP4S1, SEP5S1,SEP7S1, SEP7S2,SEP9S5, SEP10S3		
Total Points Possible & Received:			/

Grades: *Grades are earned through points and converted into a percentage. Percentages are calculated by dividing the total points earned by the total points possible. Grades are assigned to percentages as follows:*

Percent	Grade	
90-100%	A	Target
80-89%	B	Acceptable-high
70-79%	C	Acceptable-low
61-70%	D	Unacceptable
0-59%	F	Unacceptable

Academic and Institution Policies:

Academic Integrity

The academic community is operated on the basis of honesty, integrity and fair play. It is the expectation that all students, as members of the college community, adhere to the highest levels of academic integrity. This means that students are responsible for submitting their own work. Student work must not be plagiarized. Students must not cooperate on oral or written examinations or work together one valuated assignments without authorization. Students should have high ethical standards and conduct themselves in an appropriate manner.

View the *Plagiarism Tutorial-Pearson Education* to learn more about plagiarism, citing sources, etc.

Confidentiality

The experiences or problems shared by classmates during meeting time are not to be discussed outside of class. This is preparation for those going into a helping field where confidentiality is stressed in the CEC Standards for Professional Practice.

Disabilities and Special Needs

Please inform the instructor within the first week of classes if any assistance is required due to disabilities or special needs. If you have a disability for which you need an accommodation, contact the Learning Center to request disability support services. Phone: (701)228-5477; Toll-free: 1(888)918-5623

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Quality of Work

At the college level of learning, it is expected that all work submitted is free of spelling, grammar and punctuation errors. Participation in the course is expected and taken into account when determining course grades. Discussion and information must be thought-out, in-depth and incorporate new vocabulary and concepts learned during the course.

Tentative Course Outline *(Subject to Change)*

Week	Discussion Topic	Readings	Assignments/ Assessments
Month & Date- Month & Date	Welcome		
Jan 7 – 13 Jan 21 - 27	Introduction to Problem Solving	Math Activity 1.1; Textbook pages 1-13	Exercise & Problems 1.1 (#4, 6, 12, 16, 18, 26, 30); Online Exercise
Jan 21 - 27	Problem Solving with Algebra	Textbook Section 1.3	Math Activity 1.3 (#2a); Exercises & Problems 1.3 (#8, 10, 11, 15, 16, 19, 20, 24, 25); Online Exercise
Jan 28 – Feb 5	Numeration Systems	Math Activity 3.1; Textbook Section 3.1	Exercises & Problems 3.1 (#7, 8, 20-23, 25-27, 32, 33); Online Exercise
Feb 4 - 10	Addition and Subtraction	Textbook Section 3.2	Discussion 1; Math Activity 3.2 (#2); Exercises & Problems 3.2 (#4b, 13, 15-19, 22, 23, 25, 27, 29, 33, 37, 41, 43); Online Exercise
Feb 11 - 17	Multiplication	Textbook Section 3.3	Math Activity 3.3 (#5); Exercises & Problems 3.3 (#5a, 5b, 7, 9, 13, 16-21, 23-25, 27-29, 33); Online Exercise
Feb 18 - 24	Division and Exponents	Textbook Section 3.4	Discussion 2; Math Activity 3.4 (#1, 4); Exercises & Problems 3.4 (2a, 2b, 3, 6, 8a, 10a, 15-17, 19, 25, 27, 30, 31, 33, 35); Online Exercise
March 18 - 24	Review for Project #1 and #2		
Feb 25 – March 3	Factors and Multiples	Textbook Section 4.1; Math Activity 4.1	Project #1 & #2; Exercises & Problems 4.1 (#4, 5, 7, 10, 13, 16, 17, 19, 27); Online Exercise
March 4 - 10	Greatest Common Divisor and Least Common Multiple	Textbook Section 4.2	Math Activity 4.2 (#1); Exercises & Problems 4.2 (#1, 3, 6, 8, 11, 13, 14, 17, 20); Online Activity
March 25 - 31	Integers	Textbook Section 5.1	Math Activity 5.1 (#2); Exercise & Problems 5.1 (1, 3, 8, 11, 16, 17, 20, 21, 24-26, 28, 29, 32-35, 41, 44, 46, 49); Online Exercise

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April 1 - 7	Introduction to Fractions	Textbook Section 5.2; Math Activity 5.2	Exercises & Problems 5.2 (#3, 7, 9, 11, 13, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37); Online Exercise
April 8 - 14	Operations with Fractions	Textbook Section 5.3; Math Activity 5.3	Exercises & Problems 5.3 (#3, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 41, 43); Online Exercise
April 15 - 21	Decimals and Rational Numbers	Textbook Section 6.1; Math Activity 6.1	Discussion 3; Exercises & Problems 6.1 (#6, 8, 10, 14, 17, 18, 21-23, 29, 30, 32, 34, 36, 38, 39, 49); Online Exercise
April 22 - 28	Operations with Decimals	Textbook Section 6.2; Math Activity 6.2	Exercises & Problems 5.2 (#3a, 3b, 4a, 4d, 6a, 10a, 10b, 12, 14, 16, 18, 19, 22, 25, 29, 33); Online Exercise
April 29 – May 5	Ration, Percent and Scientific Notation	Textbook Section 6.3	Math Activity 6.3 (#4); Exercises & Problems 6.3 (#1, 5, 7, 8, 10, 14, 16, 19, 20, 23); Online Exercise
May 6 - 10	Irrational and Real Numbers	Textbook Section 6.4; Math Activity 6.4	Exercises & Problems 6.4 (#1, 3, 5, 7, 19, 21); Online Exercise