MATH 4020-001 Mathematics for Elementary School Teachers II SYLLABUS Spring 2015 Instructor: Dr. Sayonita Ghosh Hajra

"The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary. It is the responsibility of the student to seek clarification of the grading policy and/or course requirements and procedures from the instructor."

LECTURE: MWF 11.50- 1.10 pm in LCB 121. OFFICE/PHONE: JWB Room: 124, phone: 801 581 4278 EMAIL: Sayonita@math.utah.edu OFFICE HOURS: <u>M 1.15- 2.00 pm, 3.00-4.00 pm, W 1.15- 3.00 pm or by appointment</u> <u>Course Grading</u>

Midterm: 12%

Quizzes: 12%

Final: 40%

In Class Activities: 10%

Practicum Report: 7%

Writing Assignments: 12%

Dictionary: 7%

GRADING:

The following grading scale will apply: 94 – 100 A, 90 – 93 A -, 86 – 89 B+, 83 – 85 B, 80 – 82 B -, 76 – 79 C+, 73 – 75 C, 70 – 72 C -, 60 – 69 D, and below 60 is an F.

IMPORTANT DATES

Midterm: March 11 Quizzes: Every Friday Final: Monday, May 4, 10.30- 12.30 pm Practicum Due: April 28 Holidays: Jan 19, Feb 16, March 15- 22 Drop day: Jan 21 Withdraw day: March 6 Last class: April 28 Reading day: April 29

TEXT: Mathematics for Elementary School Teachers with Activities, 4th edition, by Sybilla Beckmann, published by Pearson Education (Available at the bookstore).

COURSE CONTENT: This is the second course in a two-course sequence for prospective elementary school teachers. This is a content course that provides teachers with a deeper understanding of the Geometry, Statistics and Probability. This provides the conceptual framework that allows teachers to analyze and correct common student misunderstandings in Grades K-6. We will cover chapter 10-16 from the textbook.

PREPARATION FOR YOUR TEACHING:

This course is part of your preparation to become an elementary school teacher who will teach math. **Our focus in this course is on the mathematics content itself and not the methods by which you will help children learn math.** A number of the activities we will do in class can readily be modified for use in elementary school (or middle school). The coursework will often go beyond what is appropriate for typical elementary school students. This is to help you understand the material more deeply and to prepare you to guide your students toward "where the math goes next."

CLASS ACTIVITIES:

This class is based on inquiry-based approach, which allows students to explore the materials hands-on and discover the mathematical concepts for themselves. As a teacher, you will have the important responsibility of helping your students understand mathematical ideas and ways to explore and solve math problems. Consistent with research-based teaching methods, <u>I will often ask you to explain a mathematical idea</u>, a line of reasoning, or why a solution method is valid to either a classmate or the whole class. This means you will need to listen carefully to your students' mathematical ideas and misconceptions. <u>I will ask you to listen carefully to other students' methods of solution, and I will ask you to restate or ask a question about another student's idea</u>. We will use class time to think through and evaluate these ideas. Even answers that ultimately prove to be incorrect can provide invaluable learning opportunities. Your group work must consistently exhibit several or all of the following.

- Show interest in mathematical ideas
- Show interest in different ways of approaching mathematical ideas
- Listen carefully to different ways of solving a problem
- Carefully evaluate a proposed method of solution
- State whether you agree or disagree with a statement (you may feel more comfortable saying you "respectfully disagree")
- Show interest as a member of a professional learning community
- Contribute significantly in the group work

READINGS AND "DON'T HAND IN" ASSIGNMENTS

Expect to have a reading assignment due after every class. The reading is designed to help you frame the ideas discussed in class and be ready for the topic to be discussed in the next class period. The "don't hand in" assignments will consist mainly of problems whose solutions are given in the book. You should work the problems first without looking at the solutions and then read the solutions and compare them with your own. It's a good idea to discuss the "don't hand in" problems with a study group. Expect several short quizzes on the "don't hand in" problems and the reading.

There will be several <u>different types of assignments</u>:

- **Reading**: <u>Expect to have daily reading assignments</u>. The reading is designed to help you shore up the ideas discussed in class and be ready for the topic to be discussed in the next class. Consider using the effective method of retrieval practice in which you read a passage (without writing notes) and then write down what you remember, then reread the passage (again without writing notes), and then write down what you remember once again.
- **Practice Exercises**: Each section in the textbook has a collection of practice exercises whose solutions are in the book. You should work these exercises first without looking at the solutions and then read the solutions and compare them with your own. It's a good idea to discuss exercises with a study group. Quiz and test problems will often be similar to the practice exercises. You do not hand in these exercises.
- Writing Assignments: Expect daily "writing assignments". Writing Assignments will be posted in Canvas. Your work should be typed or neatly written. There will be two types of writing assignments:
- 1. "Write to reflect and summarize": These assignments will ask you to reflect on ideas we discussed in class and/or that were in the assigned reading and will ask you to express, explain, and summarize them in your own words. Use these assignments to monitor and deepen your thinking about the course topics. We will often make your posts public to the class and we may ask you to read and comment on other students' writing. These writing assignments will be graded for completion, not for accuracy. However, we may ask you to revise and resubmit your work to receive credit.
- 2. "Write to solve and explain": These assignments will ask you to solve a problem and explain the solution. Mathematics requires precise language, so attend closely to the way you express your ideas. Explain all your solutions unless there are explicit instructions not to. We may ask you to revise and resubmit your work to receive credit. Some exemplary postings may be made public to the class.

Materials Needed for the Class:

Please bring your textbook to class so that we can work on the activities. You might like to have colored pencils since we will often make math drawings as we solve problems. Bring compass, ruler and scissors for the class.

REQUIREMENTS: The following are the requirements:

- ATTENDANCE: ATTENDANCE: PROMPT, COMPLETE ATTENDANCE is expected at all classes. <u>Attendance will be taken towards the end of the class</u>. Your presence and participation in the class activities and discussions are important for your own learning and the learning of others. Missing a significant announcement in class (such as changing the date of a quiz, exam, or other graded activity) or failing to turn in a written assignment because of an unexcused absence may have adverse consequences. <u>To get benefit from the class, full attendance (two undocumented absences will be allowed) will be required. Benefit include redoing quizzes and midterm.</u>
- You should arrive on time, be prepared, be a collaborative participant and not leave early (This includes running out to feed a meter. Or texting on your phone!) Be professional!
- RESPONSIBILITY: <u>Students are responsible for informing themselves about the course description, assignments, and syllabus</u>. They are strongly encouraged to refer regularly to the course web page at Canvas as well as download and print out all relevant information.
- ✤ DICTIONARY: You will keep a dictionary of mathematical terms and symbols. Must have the main vocabulary words from each chapter.
- PRACTICUM REPORT: Each student will spend six hours in an elementary school classroom, three periods observing and three periods presenting lessons to small groups of children. The topic you work on must be area or measurement. A typewritten evaluation of this experience is to be submitted. See the attached files.

MAKE-UP POLICY: Test may be made up in the event of athletics (arrangements in advance only) or documented illness. It is the responsibility of the student to contact me as soon as possible and definitely <u>before</u> the next attended class meeting to make appropriate arrangements for making up any missed test. In order to make-up the final exam, documentation must be provided. <u>There are no make-ups for quizzes, or in class assignments</u>.

ACADEMIC HONESTY POLICY: All academic work must meet the standards contained in regulations.utah.edu/academics/6-400.php. *Students are responsible for informing themselves about those standards before performing any academic work.* This policy defends the academic integrity of all student work, and will be uniformly applied to all students in the class.

ACADEMIC ACCOMMODATION: The Americans with Disabilities Act requires that reasonable accommodations be made for students with physical, sensory, cognitive, systemic, learning, and psychiatric disabilities. Please contact me at the beginning of the semester to discuss any such accommodations for the course.