Math 133 Geometry and Measurement for K-8 Teachers **Semester: Spring 2018**
MWF S01 9-9:50am, S02 1-1:50pm **Location: LA 235**

Instructor: Bonnie Spence, Office Math 004A
Office hours MWF 10-11 am, or by appointment
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Course Description: The study of geometry and geometric measurement for prospective elementary and middle school teachers, including synthetic, transformational, and coordinate geometry, constructions, congruence and similarity, 2-dimensional and 3-dimensional measurement, and problem solving.

Prerequisite: M 132

Course Materials: Required Textbook, *Sybilla Beckmann: Mathematics for Elementary Teachers with Activities Plus NEW Skills. 5th edition.* (Pearson, 2018). with MyMathLab access pkg ISBN 978-0134800196

Notebook of choice, pencil, colored pen, grid paper (optional)
Students should have access to a protractor, compass and calculator at home.

All students are required to activate their MyMath Lab accounts. Online homework is required. MyMath Lab also provides students with immediate feedback to understanding and is a great study tool. You will have access to videos, practice quizzes, and an online textbook. (See enrollment instructions in Moodle Introduction to the course & Week 1.)

Learning Outcomes: Upon completion of this course, a student will be able to:

- Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships;
- Apply transformations and use symmetry to analyze mathematical situations;
- Use visualization, spatial reasoning, and geometric modeling to solve problems;
- Describe and apply measurable attributes of objects and the units, systems, and processes of measurement;
- Apply appropriate techniques, tools and formulas to determine measurements for length, area, and volume;
- Develop a deep understanding of the mathematical concepts needed for effective teaching by developing the ability to examine and explain underlying mathematical structure in using multiple geometric representations and tools for solving problems.

Classwork: Class activities are a mix of individual, partner, group, and all class participation. Activities with manipulatives and related discussions are difficult to replicate in the case of an absence from class. Deeper learning occurs when students are in attendance to share their explanations and methods of solving problems with each other. Please attend regularly.

Homework: Homework in this course is a mix of preparation for the next class, completion of an activity from a prior class, and/or skills practice both online or offline.

Online assignments Online work will be a combination of MyMathLab. Students are encouraged to attempt problems, use examples, and get help to obtain 100% on online assignments.

ONLINE DUES DATES:
Chapter 10 due by 2/09
Chapter 11 due by 2/23
Chapter 12 due by 3/23
Chapter 13 due by 4/18
Chapter 14 due by 5/04

Offline assignments Not all homework will be collected by the instructor, but it may be checked for completion. Homework in general is viewed as a formative assessment tool. This means it provides both the instructor and the student with feedback to their understanding and progress in the course. In order to provide meaningful feedback, a completely attempted assignment is necessary. Graded homework will be marked with comments and a grade of completion. Homework will not earn full credit if an assignment lacks quality work or a large portion is incomplete.

Assessments: Throughout the course, you will be assessed in each of the following criteria on a scale of 0 to 8 to help you identify your strengths, weaknesses and growth through the semester:

A Knowledge and Understanding
B Patterns
C Communicating
D Real World Application

Assessments will be in the form of tests, investigations, and projects.

Week	Related Chapters	Content	Assessment Type
1-3	Chapter 10	Basic terms, shapes	Test
4-5	Chapter 11	Measurement	Project
6-9	Chapter 12	Area, perimeter, Pythagorean Theorem	Investigation
10-12	Chapter 13	Volume and Surface area	Project
13-14	Chapter 14	Transformations, triangle congruence and similarity	Investigation
May 8	Chapters 10-14	Final Exam	Test (Cumulative)

S01 Final exam is scheduled Tuesday May 8 10:10-12:10 in LA235.
S02 Final exam is scheduled Tuesday May 8 3:20-5:20 pm in LA235.

Exam make-ups will ONLY be given under special and extenuating circumstances, such as a death in the family or illness, provided that: a note from the Health Service or doctor is furnished by the student AND permission is obtained from the instructor prior to the exam. The final exam is compulsory and no exceptions can be made about the date/time at which it is held- this date is determined by the University Administration.

Grading Policy: You must earn a C- or better in this course to pass the requirement in the School of Education. You may change to Credit/No Credit up to the last day of the class. Credit will be awarded to students earning a D- or better. However, if you choose this option the grade cannot be counted towards the School of Education requirement nor the UM graduation requirement.

Two grading options are available.

Traditional Grading: You may choose your traditional grade based on the standard 90-100% A, 80-89% B, 70-79% C, 60-69% D, 0-59% F with highest three percent in each range as plus and lowest three percent as minus.

In this option, the course work is weighted as 50% assessments, 30% class activities, 20% homework. This grade will appear in MyMathLab.

MYP assessment Scales: Grades will be determined using the following scale of the combined four criteria: Knowledge, Patterns, Communicating, Real world applications.

Level 7-8 → A
Level 5-6 → B
Level 3-4 → C

Level 1-2 → D
Level 0 → F

Plus/minus grades will be assigned according to a student's consistent completion of class activities and homework. 90% or more in both activities and homework constitutes a plus, 70% or less in one or both constitutes a minus grade.

Support: Math support can be obtained by attending the Math Support Lab in the Mansfield Library, visiting your instructor's office hours, and working on homework/studying with classmates. Do not wait until the week of assessments to get help. Ask questions regularly both in class and out of class as they arise.

Accommodation: The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors and Disability Services for Students (DSS). If you have a disability that adversely affects your academic performance, and you have not already registered with Disability Services, please contact Disability Services in Lommasson 154 or 406.243.2243. I will work with you and Disability Services to provide an appropriate accommodation.

Academic Honesty: All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at the following web address: http://life.umt.edu/vpsa/student_conduct.php.

Important Dates:

SPRING SEMESTER 2018

Date	Description
Thursday-Friday, January 18-19	New Student Orientation
Monday, January 22	Spring Semester Classes Begin
Monday, February 19	Presidents Day – No Classes, Offices Closed
Monday-Friday, March 26-30	Spring Break – No Classes
Friday, May 4	Last Day of Regular Classes
Monday-Friday, May 7-11	Final Exams
Saturday, May 12	Commencement