Prof Russell Sundberg  
MTH 328 section 1 Syllabus  
Location MC326  
TR  2:00 – 3:45  
Contact - a.sundberg@csuohio.edu  
Text only in emergencies 440 227 6524

Office Hours  RT 1532  
Tuesday Thursday 11:30 – 1:45  
Or by appointment

My expectations

1. “Do” All of the homework  
2. Attend All classes for the duration of the class  
3. Begin homework well before the due date  
4. Work in groups  
5. Notify me before class if you will be absent

What you can expect from me

1. Help with homework  
2. Office hours

Course Description: This is a course designed for middle school teachers interested in deepening their conceptual understanding of the geometry taught in middle grades classrooms. It is part of the required course content sequence for undergraduates seeking a concentration in mathematics as part of their middle school licensure.

Topics will include dynamic geometry integrating use of computer software such as Cabri, and geometer’s sketchpad; some basic geometry theorems and constructions using compasses, paper folding, or appropriate computer software; similarity, proportion, scaling, and geometric growth; tessellations; simple trigonometric and triangle relationships; van Hiele levels of geometric thought; geometric modeling and networking as problem solving tools; linear, 2D and 3D measurement; fractals & chaos; graphical representations; transformational geometry; and coordinate geometry with algebraic relationships (analytic geometry).

Course Goals/Objectives:

A. Knowledge

The student will demonstrate knowledge of:
1. geometry and its applications in the real world  
2. how to communicate geometric ideas in the language of the mathematician  
3. the fundamental theorems of Euclidean geometry
4. both the procedural and the conceptual meaning of measurement

B. Skills

The student will demonstrate the following skills:
1. apply appropriate techniques, tools, and formulas to determine measurements
2. select and use units of appropriate size and type to measure angles, perimeter, surface area, and volume
3. analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships
4. apply transformations and use symmetry to analyze mathematical situations
5. use visualization, spatial reasoning, and geometric modeling to solve problems

C. Dispositions

The student will:
1. Gain a more profound understanding of measurement and of geometry
2. Experience mathematics as a constructivist interaction among students, the instructor, and the course content
3. Relate and integrate geometry into real life contexts as well as into other disciplines

Text:

Mathematical Ideas, 12th edition; C.D. Miller, V.E. Heeron, J. Hornsby, and M.L. Morrow; Addison Wesley

Additional content from http://www.corestandards.org/

Course requirements:

Students will be expected to go beyond reading the text and solving some problems: thoughtful reflection on the “what” and “why” of the course is an important part of real learning and of professional development.

A. Attendance – Students must attend and actively participate in all classes including discussions and problem solving activities.
B. Group Work – Group projects and assignments will be a regular part of in-class protocol. Students are also encouraged to work with their groups on homework.
C. Presentations – Students will present lessons in groups as though teaching to middle school students (when appropriate)
D. Quizzes – There will be (approximately) 8 quizzes (4 group / 4 individual quizzes)
E. Tests—There will be Three (3) tests covering the content presented in class
Grading:

Group Work / Homework/ Presentations  20%
Quizzes                               15%
Test 1                                 20%
Test 2                                 20%
Final/Test 3 (cumulative)             25%

Grading Scale:

Final Letter grades are assigned as follows:

A   93.0-100
A-  90.0-92.9
B+  88.0-89.9
B   83.0-87.9
B-  80.0-82.9
C+  78.0-79.9
C   70.0-77.9
D   60.0-69.9
F   0-59.9

Course Outline:

Content of the course will be chapters 9 and 14 of the 12th edition

Other topics include constructions with a straightedge and compass

The professor reserves the right to change the course content.

Portions of this syllabus are copied from Dr. Patrick Wachira