MAT 201 A
Foundations of Elementary Mathematics II
Fall 2012

Text: *Mathematics for Elementary Teachers, A Contemporary Approach, Ninth Edition,* Gary L. Musser, William F. Burger, and Blake E. Peterson

Instructor: Miriam Clifford
Class Schedule: Monday and Thursday, 2:00 - 3:50 P.M. **Location:** Maxon 103
Office: Maxon 109 **Phone:** 414-975-4355 **E-Mail:** miriamclifford@sbcglobal.net
mcliffor@carrollu.edu

Office Hours: 1:00 - 2:00 P.M., Monday and Thursday and other times by appointment
Final Examination: **Tuesday, December 18, 1:00 PM**

Grading Scale:		
	93 - 100%	A
	88 - 92%	AB
	83 - 87%	B
	78 - 82%	BC
	70 - 77%	C
	60 - 69%	D
	0 - 59%	F

Course Evaluation:	% of course grade
Assignments and Quizzes	20%
Statistics Project	5%
Geometry Project	5%
Tests	40%
Final Examination	25%
Class participation	5%

Course Content:
The intent of this course is to introduce prospective teachers to the mathematics central to a comprehensive elementary and middle school mathematics curriculum. Concepts include problem solving, statistics, probability, properties of geometric shapes, measurement, similarity, congruence, coordinate geometry and transformations. Material will be taught in a manner consistent with NCTM *Principles and Standards for School Mathematics and Curriculum Focal Points* and Common Core Standards for Mathematics, adopted as Wisconsin's standards in 2010.

Course Objectives:
As a result of completing this course, students will:

1. Solve many different types of mathematical problems using a process that involves the following steps: analyze a problem, devise a plan or strategy to solve the problem, carry out the plan or strategy, evaluate both the answer and method of solution.

2. Learn how to quantify information by using an investigation process that includes: formulate questions, collect data, organize data, then represent data in plots, graphs, and charts.

3. Analyze and interpret data using statistical methods.

4. Perform and analyze probability experiments. Calculate the probability of an event and compare theoretical and experimental probabilities.

5. Understand specific concepts related to probability, including bias, random, mutually exclusive, conditional.

6. Calculate odds and expected value.

7. Recognize and define geometric shapes in 1, 2, and 3 dimensions and state their properties.

8. Calculate measures directly using proper units and tools. These include measures of length, area, volume, capacity, weight or mass, temperature in customary and metric systems.

9. Calculate measures indirectly using estimates, ratio and proportion, formulas, the Pythagorean theorem, geometric relationships.

10. State the properties of congruent and similar figures and solve related application problems.

11. Complete basic Euclidean constructions.

12. Describe the effects of transformations (flips, slides, turns, scaling).

Students' achievement of these objectives will be measured using written assignments (Pick 2 Problems), which are turned in and graded, quizzes, tests, projects, class participation (attendance and participation in class and presentation of solutions for at least 2 different problems), and a final examination.

Course Expectations:
Unless otherwise indicated, assignments given in class will be due at the next class session. Students are expected to attend class regularly and participate in group activities and class discussions. Attendance will be checked and excessive class absences will affect the class participation grade of the student.

Policy Statements:
Statement on Academic Integrity – The Carroll College Academic Integrity Policy is located in the student handbook. If a student violates this policy in any way, a sanction of failure on the assignment/assessment or failure in the course may be applied. If you have questions about appropriate citations, please ask.

Accommodation for Disabilities – Any requests for accommodation must be made through the Disability Services Coordinator at Carroll College. Appropriate accommodations will be made in accordance with the documentation received from the Disability Services Coordinator.

Modifications to the syllabus: The Instructor and the College reserve the right to modify, amend, or change the syllabus (schedule, course requirements, grading policy, etc.), as the curriculum and/or program require(s).
Course Assignments

Date		***Topic***	***Assignment***
9/6	10-1	Organizing and Picturing Information	P. 451 # 1,2,3,6,8,10,14,17,21,23,25 Statistics Project, due 10/8
9/10	10-2	Misleading Graphs and Statistics	P. 475 # 1,3,10,11,20,21
9/12	10-3	Analyzing Data	P. 497 # 1,4,5,8,11,13,14,15,17,19,23
9/12	10-3	Analyzing Data, cont. Meet with instructor to approve statistics project ideas.	Pick any two of the following B Problems and write out complete solutions. P. 456 # 3,14,25a,b, P. 478 # 3,10 P. 500 # 10,14,18
9/20	11-1	**Quiz (Chapter 10)** Simple Probability Experiments	P. 522 # 2,3,6,7,11,13,16,17,18,19,20
9/24	11-2	Complex Probability Experiments	P. 538 # 2,4,5,8,9,12,13,17,18,19,21,22,23
9/27	11-3	Counting Techniques	P. 552 # 1,2,3,4,5,7,8,9,10,12,14,17,22,27
10/1	11-4	Simulations, Expected Value, Odds, and Conditional Probability	P. 563 # 3,4,6,7,8,9,12,15,16,18,21,22 Pick any two of the following B problems and write out complete solutions. P. 525 # 8,18,19 P. 542 # 18,20,23 P. 554 # 6,25,28 P. 567 # 18,22,23
10/4		**Test 1 (Chapters 10 and 11)**	
10/8	12-1	**Project Presentations** Geometric Shapes and Definitions	P. 593 # 2,5,7,11,16,21,22
10/11	12-2 12-3	Shapes and Symmetry Points, Lines, Planes and Angles	P. 613 # 1,2,3,4,5,6,7,8,10,11 P. 628 # 6–18
10/15		**Fall Break – No Class**	
10/18	12-4	Regular Polygons, Tessellations and Circles	P. 643 # 3,4,5,6,7,14,15,21,24–27
10/22	12-5	Geometry in Three Dimensions	P. 660 # 4,5,8,10,12,18,20,21 Pick any two of the following B Problems and write out complete solutions. P. 597 # 3,7 P. 615 # 14 P. 631 # 15,19 P. 647 # 6,14 P. 665 # 10,20
10/25	13-1	**Quiz (Chapter 12)** Units of Measure	P. 694 # 3–19,23,27
10/29	13-2	Length and Area	P. 710 # 2,3,4,7,8,9,11,12,14,18,19,21,23,24
11/1	13-3	Surface Area	P. 727 # 1,2,3,4,6,8,11,15

11/5	13-4	Volume	P. 740 # 1,2,3,4,6,8,9,11,12,13,30 Pick any two of the following B Problems and write out complete solutions. P. 697 # 14,19 P. 716 # 12,18,19,31 P. 729 # 1,3,11 P. 743 # 2,11,22
11/8		**Test 2 (Chapters 12 and 13)**	
11/12	14-1	Congruence of Triangles	P. 761 # 1–12,14
11/15	14-2	Triangle Similarity	P. 772 # 1–14,21
11/19	14-3 14-4	Euclidean Constructions	P. 789 # 1–12,20 P. 800 # 1,2,4,5,7,10
11/24		**Thanksgiving – No Class**	
11/26	14-5	Problem Solving with Geometry	P. 811 # 1,2,4,9,10 Pick any two of the following B Problems and write out complete solutions. P. 764 # 11,18 P. 776 # 3,10 P. 791 # 9,19 P. 803 # 4,12 P. 813 # 1,4,11
11/29	 15-1	**Quiz (Chapter 14)** Distance and Slope	 P. 831 # 1–6,10,12
12/3	15-2 15-3	Equations and Coordinates Geometry Problems	P. 844 # 2,3,4,8,9,10,11,13,17 P. 854 # 1,3,4,8,9,10,14
12/6		Geometry Sketchpad Project using the Computer	Handout Pick any two of the following B Problems and write out complete solutions. P. 833 # 3,11 P. 846 # 11,25 P. 856 # 7,9 P. 884 # 8,17
12/10	16-1	Transformations Review	P. 879 # 1,8,11,13,16,17,19
12/13		**Reading Day**	
12/18		**Final Exam (Chapters 10 – 16-1)** **Tuesday, 1:00 PM**	