COURSE NUMBER: MAT202

COURSE TITLE: Math for Teachers 2

Faculty Name:

Contact Information:

Pre-Requisite: Pass MAT201 with a C or better.

Text/Software:

Credits: 3

40 Hours of Structured Learning Activities

COURSE DESCRIPTION: This class will prepare teacher candidates to become effective mathematics teachers in their own classrooms. Through mathematical investigations candidates will learn the underlying concepts, structures, functions and patterns that promote mathematical reasoning and understanding. Candidates will investigate how moving progressively through essential topics deepens their understanding of mathematics. Students will use the National Council of Teachers of Mathematics Standards and STEM strategies. Various methods such as modeling, collaboration, manipulatives, thinking made visible, and writing across the curriculum will be presented for bridging classroom activities and real-world problem solving. Teacher candidates will learn how to analyze their students’ math-solving processes by developing thorough explanations of their own mathematical understanding and critiquing the explanation of others’ mathematical understandings. Candidates will communicate their mathematical ideas, processes, analyses and understandings through both writing and speaking. This course concentrates on geometry, measurement, probability and statistics and their application to student learning and classroom teaching.

At the conclusion of this course students will be asked to evaluate the course based on the following objectives:

IDEA – 1 Gain factual knowledge (terminology, classifications, methods, trends).
IDEA – 2 Learn fundamental principles, generalizations or theories.
IDEA – 3 Learn to apply course material (to improve thinking, problem solving and decisions).
COURSE GOALS

GOAL A: Students will proficiently work with two and three dimensional geometry.

Learning objectives: Students will be able to:
A-1 Identify, draw and construct rays, lines, line segments, parallel lines and perpendicular lines.
A-2 Classify, draw and construct angles by measure.
A-3 Classify, draw and construct polygons and solids, especially using nets.
A-4 Use transformations in the plane.
A-5 Perform translations, rotations and reflections and show how shapes are congruent; perform dilations and show how shapes are similar.
A-6 Explain and apply theorems about circles, radii and diameters.
A-7 Solve real-life problems involving perimeter and area for polygons.
A-8 Solve real-life problems involving surface area for three dimensional figures.
A-9 Solve real-life problems involving volume for three dimensional figures.

GOAL B: Students will solve real-life problems involving measurement.

Learning Objectives: Students will be able to:
B-1 Solve problems involving elapsed time and money.
B-2 Measure and compare lengths of objects using standard tools.
B-3 Know relative sizes of and convert between US units and metric units.

GOAL C: Students will solve real-life problems involving probability and statistics.

Learning Objectives: Student will be able to:
C-1 Calculate the mean, median and mode and determine which measure of central tendency best describes a set of data.
C-2 Calculate the range and standard deviation and determine how changes in data affect these measures of variation.
C-3 Calculate measures of position – percentiles and quartiles - and use them to make comparisons between data.
C-4 Represent data using histograms, dot plots, box plots, circle graphs and bar graphs and identify outliers and shapes of graphs.
C-5 Interpret models for bivariate data, including regression lines and scatter plots.
C-6 Use random sampling to draw inferences about a population.
C-7 Develop, use, and evaluate probability models.

EVALUATION PROCEDURE AND GRADING POLICY:

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College of Arts and Sciences
LATE ASSIGNMENT POLICY:

CAS CLASSROOM STANDARDS: See Blackboard “Syllabus” area

COURSE SCHEDULE (all assignments/exams and due dates):