



MATH 128 - Intermediate Mathematics for Elementary Teachers Course Syllabus

Course Description: Elementary concepts of geometry and measurement, probability, and statistics with an emphasis on problem solving and critical thinking

Credit Hours: 3

Course Prerequisites and Corequisites: MTH 127

Course Outline:

	Approximate Time Spent
<ul style="list-style-type: none">• Geometric Figures: Definitions, Properties, and Relationships	20%
<ul style="list-style-type: none">○ Build basic vocabulary of geometric figures○ Analyze properties of two and three dimensional figures○ Explore relationships between lines, planes, polygons, and solids	
<ul style="list-style-type: none">• Geometry and Measurement	30%
<ul style="list-style-type: none">○ Investigate standard and nonstandard units of measure○ Explore linear measurement: perimeter, circumference○ Explore area of regular and irregular shapes○ Use the Pythagorean Theorem appropriately○ Explore measures of surface area and volume: lateral surface area, base, height, slant height○ Investigate temperature as a form of measurement	
<ul style="list-style-type: none">• Geometry of Congruence, Similarity, and Transformations	20%
<ul style="list-style-type: none">○ Investigate properties of congruent and similar figures○ Explore ratio and proportion as applied to geometric figures○ Perform basic constructions using Mira, paper folding, compass, straightedge, and technology (when applicable)○ Perform rigid and similarity transformations on a variety of figures○ Explore properties and outcomes of rigid transformations○ Explore types of symmetry	
<ul style="list-style-type: none">• Statistics	15%
<ul style="list-style-type: none">○ Collect, organize, analyze, and present real data○ Utilize appropriate types of graphs for various data types○ Interpret graphs and tables○ Investigate the use of graphs to distort statistics○ Analyze measures of central tendency and dispersion	
<ul style="list-style-type: none">• Counting Principles and Probability	15%
<ul style="list-style-type: none">○ Explore basic counting principles○ Understand and utilize factorial notation○ Explore the language of uncertainty: sample space, outcome, event, equally likely, mutually exclusive events, certain and impossible events○ Investigate experimental probability: simulation○ Determine Expected Value	

MTH 128 – Intermediate Mathematics for Elementary Teachers
Syllabus continuation

Student Learning Outcomes (SLO): At the end of MTH 128, a student who has studied and learned the material should be able to:

1. Use problem solving strategies to model, construct, and solve problems within and outside mathematics.
2. Use technology to explore geometric concepts and perform geometric constructions and transformations.
3. Apply spatial visualization skills to construct, transform, and measure two and three dimensional objects.
4. Apply concepts of congruence and similarity.
5. Use mathematical reasoning to develop strategies of conjecture and justification, leading to geometric proof.
6. Understand measurement as a process and apply basic concepts of measurement to real world settings.
7. Use basic counting principles and apply concepts of probability theory.
8. Apply basic concepts of statistics, including data classification, collection, and analysis.
9. Understand geometry as an axiomatic system.

There are no specific program learning outcomes for this major addressed in this course. It is a general education core curriculum course ad/or a service course.