



**Mathematics 143**  
**Geometry and Probability for Ed**  
**Course Outline Winter 2017**

**Calendar Description:**

*Designed for prospective elementary school teachers*, this course provides students with a solid grounding in fundamental *mathematical methods and concepts with which to teach math at an elementary school level*. Topics include: polygons; polyhedra; symmetry; tessellations; similarity; transformation geometry; measurement basics, area, surface area, and volume; Pythagorean Theorem; combinations and permutations; and introduction to probability. A selection of recreational mathematics activities is included. To find where this course transfers, check the [BC Transfer Guide](#)

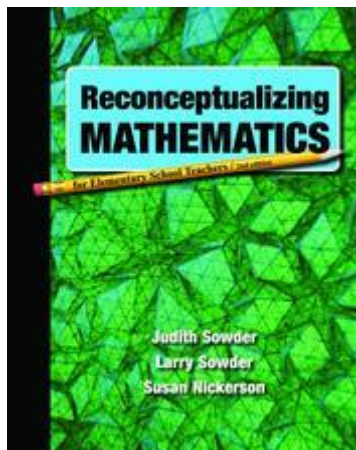
<b>Instructor:</b>	Stephen Benecke
<b>Office</b>	E254
<b>Course Website</b>	D2L
<b>Office Hours</b>	MTWRF 10:30-11:30
<b>Credits:</b>	4
<b>Hours:</b>	5 lecture hours per week for 14 weeks
<b>Prerequisites:</b>	"C" in Principles of Math 11, or Pre-calculus 11, or Foundations of Math 11, or Applications of Math 12, or MATH 073, or MATH 137; <b>or</b> "C+" in either MATH 135 or MATH 072; <b>or</b> assessment
<b>Exit Grade:</b>	A grade of at least <b>C</b> (60%) is required for entry into most university education programs.

**Intended Learning Outcomes:** The Intended Learning Outcomes for this course, as approved by the Education Council, are as follows. Upon completion of this course the student will be able to:

1. Use, recognize, and illustrate the various terms associated with polygons and polyhedral.
2. Identify all the reflection and rotational symmetries of a given two-dimensional or three-dimensional figure.
3. Use a geometry set to construct basic geometric shapes, create and manipulate angles and line segments.
4. Correctly use adjectives for angles and work with the corresponding relationships.
5. Measure length, angle size, area and volume in standard units.
6. Use formulas to find measurements of circumference, area, and volume.
7. Apply the Pythagorean Theorem to solve right triangle problems.
8. Create an artistic tessellation to demonstrate how a given figure can tessellate a plane or space.
9. Solve basic probability problems including examples involving permutations and combinations.
10. Explain mathematical concepts at an elementary school level.

**Required Materials:**

Suggested Texts: Reconceptualizing Mathematics for Elementary School Teachers by Judith Sowder, Larry Sowder, and Susan Nickerson. Freeman, 2014.

**Course Content:****Chapters**

- 16. Polygons
  - 17. Polyhedra
  - 18. Symmetry
  - 20. Similarity
  - 22. Transformation Geometry
  - 23. Measurement Basics
  - 24. Area, Surface Area, and Volume
  - 25. Counting Units Fast: Measurement Formulas
  - 26. Special Topics in Measurement
  - 27. Quantifying Uncertainty
  - 28. Determining More Complicated Probabilities
  - 33. Special Topics in Probability
- Additional topics: A selection of recreational math topics

**Basis of Student Assessment (Weighting)**

(a) Assignments: 10%

(b) Term Tests: 40%

(c) Final Examination: 50%

*The final exam will cover the entire course and will be 3 hours long*

**Standard Grading System (GPA):**

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D	Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite.	1
0-49	F	Minimum level has not been achieved.	0

For information on Camosun College's grading policy, see Sec E-1.5 on the policy webpage [camosun.ca/about/policies/policies.html](http://camosun.ca/about/policies/policies.html).