



**I. COURSE DESCRIPTION:**

This course continues to develop the student's problem solving abilities using a variety of tools and strategies including computer technology. In addition, skills required to perform mental calculations and communicate mathematical concepts and processes will be emphasized and assessed. The student will continue to learn to use technology as a tool to collect, organize and display numerical data. Topics include similar triangles, ratio and proportion, trigonometry, percent, descriptive statistics, functions.

**II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

Upon successful completion of this course, the student will demonstrate the ability to:

1. Solve problems involving mathematics

Potential Elements of the Performance:

- exhibit perseverance, ability, and confidence to use mathematics to solve problems
- use a variety of problem-solving strategies and exhibit logical thinking
- work effectively with others to solve problems
- estimate and check answers to problems and determine the reasonableness of results
- communicate findings both in writing and orally using appropriate mathematical language and symbolism

2. Solve problems related to similar triangles and trigonometry

Potential Elements of the Performance:

- similar triangles and their properties
- right triangle trigonometry
- applications of trigonometry
- use law of sines and law of cosines to solve oblique triangles
- applications of the law of sines and cosines

3. Solve problems involving exponential and logarithmic functions

Potential Elements of the Performance:

- investigate applications of exponential growth
- Investigate the use logarithmic equations related to pH

4. Solve problems involving percents

Potential Elements of the Performance:

- change fractions or decimals to percent equivalent and vice versa
- identify rate, base, and proportion
- calculate to find the unknown rate, base, or proportion
- estimate the percent of a number
- calculate to find the amount, new amount, rate, or base in percent increase or decrease situations
- estimate the amount you pay for a sale item
- solve problems involving the percents in applied situations

5. Communicate quantitative information by using a variety of descriptive statistic processes.

Potential Elements of the Performance:

- recognize the value of statistical information in a variety of environments.
- collect, collate, analyze and interpret data for a variety of purposes.
- derive meaningful information from statistical data.
- present and interpret data in such a manner that it is understood by and is meaningful to colleagues, peers, and clients.
- construct a variety of charts, such as histograms, bar graphs, circle graphs, and scatter plots.
- use Microsoft Excel and Geogebra to collate and analyze data, and to create charts, graphs, and calculate statistical information.
- become critical of the statistical information portrayed in the media, work, and educational environments
- calculate the mean, median and mode, as appropriate.
- Calculate measures of variation (min, max, range, variance, standard deviation).
- understand the Central Limit Theorem and be able to construct confidence intervals and to determine appropriate sample sizes.
- make practical application of the normal distribution.

**III. TOPICS:**

1. Similar Triangles and Trigonometry
2. Percent
3. Descriptive Statistics
4. Exponential and Logarithmic Functions

**IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

Calculator: SHARP Scientific Calculator EL-531.

Geometry Set

*The use of some kinds of calculators, cell phones, and other electronic devices may be restricted during tests.*

**V. EVALUATION PROCESS/GRADING SYSTEM:**

Individual Assignments	20%
Group Assignments	20%
Unit Tests	60%

The following semester grades will be assigned to students:

<b>Grade</b>	<b><u>Definition</u></b>	<i>Grade Point Equivalent</i>
A+	90 – 100%	
A	80 – 89%	4.00
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

**VI. SPECIAL NOTES:**Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

**VII. COURSE OUTLINE ADDENDUM:**

The provisions contained in the addendum located on the portal form part of this course outline.