

I. COURSE DESCRIPTION:

This course focuses on developing the student's number sense and problem solving abilities using a variety of tools and strategies that include computer technology. Skills required to perform mental calculations and communicate mathematical concepts and processes will be emphasized and assessed. By the end of the course, the student will be able to interpret mathematical models, represent quantitative information in a variety of ways and use different mathematical and statistical methods to solve problems. Topics include number sense, geometry, measurement, percent and descriptive statistics.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Perform calculations accurately with and without technology

Potential Elements of the Performance:

- use computer technology, throughout the semester, to improve mental mathematical skills and speed
- use estimation to check and determine the reasonableness of answers, round values appropriately as required
- use appropriately as a problem solving tool

2. 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

3. Measure and work with measurements

Potential Elements of the Performance:

- use Metric, Imperial, and U.S. Customary System of measurement
- convert between systems of measurement
- work with measures of length, area, volume, currency, etc
- make reasonable estimations of the measure of various items
- measure various items using the appropriate methods and devices

4. Angles and Plane Geometry

Potential Elements of the Performance:

- measure of angles and angle relationships
- angles formed by intersecting lines, perpendicular lines, parallel lines, complementary angles, supplementary angles, corresponding angles, alternate angles, sum of angles in polygons
- right triangles and the Pythagorean Theorem
- calculate the perimeter and area of regular and irregular plane geometric shapes; i.e. rectangle, square, parallelogram, rhombus, trapezoid, triangle, circle, semi-circle, and composite shapes
- applications of plane geometry; directions and bearings

6. 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 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. Number Sense and Mental Calculations
2. Angles and Plane Geometry
3. Descriptive Statistics

IV. REQUIRED RESOURCES:

Calculator: SHARP Scientific Calculator EL-531.

Note:

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

Geometry Set:

Students are to bring a geometry set to each class that includes the following list of items:

- 6 inch ruler graduated in both inches and millimetres
- protractor
- compass
- $45^{\circ}/90^{\circ}$ triangle and $30^{\circ}/60^{\circ}$ triangle



Software:

- Word and Spreadsheet software installed on home computer

V. EVALUATION PROCESS/GRADING SYSTEM:

Individual Classroom Activities and Attendance	20%
Group Classroom Activities and Assignments	20%
Tests	60%

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	
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.