

I. COURSE DESCRIPTION:

This course is designed to provide the student with the skills and knowledge required to design representative surveys as well as to collect and analyze field data for a variety of resource applications. Statistical analysis, manipulation and presentation of data in professional table and graphic format will be performed using Excel. GPS units, GPS Utilities software and Google Earth Pro will be used to locate sample plots.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Design a representative resource surveyPotential Elements of the Performance:

- discuss resource sampling concepts
- determine the survey objective
- itemize the requirements for a representative resource survey
- establish the sampling intensity
- outline the sampling method
- determine plot size, plot type (variable and fixed area), number of plots, plot location

This learning outcome will constitute approximately 10% of the course.

2. Accurately collect resource field dataPotential Elements of the Performance:

- use maps, GPS units, aerial photographs and/or Google Earth Pro imagery to accurately locate plots in the field
- itemize equipment requirements
- use equipment check lists
- accurately follow instructions for field data collection use the appropriate field equipment in a safe, accurate and precise manner
- accurately tally field data
- keep neat, accurate and complete field notes and tally sheets

This learning outcome will constitute approximately 20% of the course.

3. Discuss and perform basic statistical analysis on field dataPotential Elements of the Performance:

- differentiate between descriptive statistics and inferential statistics
- use such terms as frequency, sample, population, class limits
- review measures of central tendency such as mean, median and mode
- review measures of dispersion such as range, standard deviation, and coefficient of variation
- calculate the standard error of the mean
- determine confidence intervals for the population mean
- perform a one and two sample hypothesis testing (t-test)
- estimate the required sample size for a predetermined precision level
- explain linear regression with natural resources examples
- define such words as independent variable, dependent variable, linear and non-linear relationship, slope and y-intercept of a straight line
- calculate the regression equation between two variables
- use correlation analysis and determine the strength of the relationship

This learning outcome will constitute approximately 30% of the course.

4. Format, present and interpret field data in technical reportsPotential Elements of the Performance:

- use properly the Natural Resources Standard Technical Report Format
- construct and analyze various graphical representations of data including line and scatter plots, histograms, bar graphs, frequency polygons and circle graphs using appropriate software
- construct tables with appropriate labels and titles
- import tables and graphs into a technical report
- compile data and generate summary statistics
- interpret and discuss the results of the surveys

This learning outcome will constitute approximately 40% of the course.

III. TOPICS:

1. Resource Sampling Concepts
2. Basic Descriptive Statistics
3. Resource Sampling Design
4. Resource Surveys

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Available **ON LINE**

V. EVALUATION PROCESS/GRADING SYSTEM:

Quizzes/Assignments 80%

Unit Tests 20%

100%

All assignments **must** be completed for course credit. Grades for late assignments will be reduced 10% per day late.

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.	

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.