

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. Technical reports will be produced for each resource survey conducted.

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
- locate the property and corresponding maps and aerial photographs
- establish the sampling intensity
- outline the sampling method
- determine plot size, plot type, number of plots, plot location
- itemize equipment requirements

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

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

- use maps and aerial photographs to accurately locate plots in the field
- use equipment check lists
- layout the plot in the field
- accurately follow instructions for field data collection
- use the appropriate field equipment in a safe, accurate and precise manner
- 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
- understand and calculate measures of central tendency such as mean, median and mode
- understand and determine 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: None

V. EVALUATION PROCESS/GRADING SYSTEM:

Quizzes/Assignments	40%
Unit Tests	<u>60%</u>
	100%

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

Students missing a field trip without a provable documented valid reason will be permitted to submit the respective report but will receive a maximum grade of 50%.

The following semester grades will be assigned to students in postsecondary courses:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	
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.	

VI. SPECIAL NOTES:

Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your instructor and/or the Special Needs office. Visit Room E1204 or call Extension 493, 717, or 491 so that support services can be arranged for you.

Retention of course outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. Students who engage in “academic dishonesty” will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course outline amendments:

The Professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean’s secretary. Students will be required to provide a transcript and course outline related to the course in question.