SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

Sault College

COURSE OUTLINE

COURSE TITLE: RESOURCE SAMPLING

CODE NO. : NRT 223 **SEMESTER:** III

PROGRAM: FISH & WILDLIFE TECHNICIAN

AUTHOR: VALERIE WALKER

DATE: JUNE 2008 **PREVIOUS OUTLINE DATED:** JULY 2007

APPROVED:

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 CHAIR DATE

TOTAL CREDITS: 3

PREREQUISITE(S): NONE

HOURS/WEEK: 16 WEEKS

RESOURCE SAMPLING   NRT 223
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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. PDA's
will be employed to collect field data and download to a PC for analysis.

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 survey**

Potential 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 data**

Potential 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 (Downed
  woody debris, Natural Disturbance Pattern Emulation Guideline
  survey, Permanent Forest Inventory)
- use the appropriate field equipment in a safe, accurate and
  precise manner
- accurately tally field data using a PDA and download to a PC
- 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 data**

   Potential 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 reports**

   Potential 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	**40%**
Unit Tests	**60%**
	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:

Grade	Definition	Grade Point Equivalent
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.
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:

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 professor and/or the Special Needs office. Visit Room E1101 or call Extension 2703 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.

Communication:
The College considers **WebCT/LMS** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the **Learning Management System** communication tool.

Plagiarism:
Students should refer to the definition of "academic dishonesty" in *Student Code of Conduct*. 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.

Tuition Default:

Students who have defaulted on the payment of tuition (tuition has not been paid in full, payments were not deferred or payment plan not honoured) as of the first week of *<choose November, March, or June>* will be removed from placement and clinical activities. This may result in loss of mandatory hours or incomplete course work. Sault College will not be responsible for incomplete hours or outcomes that are not achieved or any other academic requirement not met as of the result of tuition default. Students are encouraged to communicate with Financial Services with regard to the status of their tuition prior to this deadline to ensure that their financial status does not interfere with academic progress.

VII. **PRIOR LEARNING ASSESSMENT:**

Students who wish to apply for advance credit transfer (advanced standing) should obtain an Application for Advance Credit from the program coordinator (or the course coordinator regarding a general education transfer request) or academic assistant. Students will be required to provide an unofficial transcript and course outline related to the course in question.

Credit for prior learning will also be given upon successful completion of a challenge exam or portfolio.