SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

SAULT
COLLEGE

COURSE OUTLINE

COURSE TITLE: Data Analysis and Presentation

CODE NO. : NET 150   **SEMESTER:** 2

PROGRAM: Natural Environment Technician / Technologist

AUTHOR: Valerie Walker

DATE: Jan 2012   **PREVIOUS OUTLINE DATED:** Jan 11

APPROVED: "B.Punch"

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                    CHAIR   **DATE**

TOTAL CREDITS: 2

PREREQUISITE(S): None

HOURS/WEEK: 2

I. COURSE DESCRIPTION:

This course is designed to provide the student with the skills to analyze and present 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. In addition students will gain a deeper understanding of file management as well as presentation managers such as PowerPoint. Students are assumed to be competent in the use of word processors.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. ***Use PowerPoint to design an effective fish and wildlife related computer-based slide presentation.***

   Potential Elements of the Performance:
   - Choose a group of similar wildlife species and research distinguishing field identification features for each
   - Storyboard an effective presentation
   - Use text, graphics and charts to create an effective presentation

   This learning outcome will count for approximately 10% of the final mark.

2. ***Use a Global Positioning System receiver and related software to determine UTM coordinates, to collect both track logs and waypoints and to create appropriate maps.***

   Potential Elements of the Performance:
   - Understand the functional elements of a GPS receiver.
   - Use a GPS receiver to determine UTM coordinates in the field.
   - Use a GPS receiver to collect track logs
   - Use a GPS receiver to collect waypoints in the field

   This learning outcome will count for approximately 15% of the final mark.

4. ***Use Personal Digital Assistants (PDA) to gather field data.***

Potential Elements of the Performance:
- Use a PDA to collect field data
- Transfer data files from a PDA to a PC

This learning outcome will count for approximately 10% of the final mark

5. ***Use a spreadsheet to format and present scientific data related to natural resource applications.***

Potential Elements of the Performance:
- Analyze field notes to determine formatting and analysis needs.
- Load field data from tally sheets or from hand-held computers onto spreadsheets
- Use formatting features to present data in an effective, professional manner
- Work with dates and times in an effective manner
- Effectively design and use data entry forms
- Use sorting, filtering, functions and formulas
- Construct and analyze various graphical representations of data including line and scatter plots, histograms, bar graphs, frequency polygons and circle graphs
- Import tables and graphs into a technical report

This learning outcome will count for approximately 35% of the final mark.

6. ***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
- Calculate and interpret measures of central tendency such as mean, median and mode
- Calculate and interpret measures of dispersion such as range, standard deviation, and coefficient of variation
- Calculate and interpret the standard error of the mean
- Determine and interpret 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 terms such 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.

III.   TOPICS:
1. PowerPoint
2. Global Positioning Systems
3. Use of personal Digital Assistants in field data collection
4. Spreadsheets – Data Analysis and Presentation
5. Summary Statistics
6. Regression & Correlation

IV.   REQUIRED RESOURCES/TEXTS/MATERIALS:
1 USB memory stick (flash drive)
All reference material is on LMS

V.   EVALUATION PROCESS/GRADING SYSTEM:

Tests	40%
Assignments	60%
Total	100%

Note: Students must pass the Excel Test in order to pass the course. If the Excel Test is not passed on the first attempt, a rewrite may be allowed, late in the semester. Rewrites will only be allowed for students that have submitted all assignments and those with good attendance.

NOTE: Assignments will be reduced at a rate of **10% per day** for late submissions for a period of 5 days after the due date. After 5 days, submissions will be valued at zero (0). All labs/assignments and reports must be submitted regardless of lateness to pass the course.

Attendance during field exercises is **MANDATORY.**
Student missing field work without valid, documented reason will risk repeating the course.

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

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:

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.