

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: BIOMETRICS

Code No.: FOR 308-3

Program: FISH AND WILDLIFE TECHNOLOGY

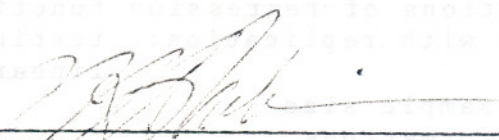
Semester: VI

Date: MAY, 1985

Author: V. WALKER

New: _____ Revision: X

APPROVED:


Chairperson

_____ Date

COURSE OUTLINE

TEXTS: Statistics for the Biological Sciences - W.C. Scheffler
Student Minitab Reference Manual.

HOURS

- UNIT #1:** TWO-FACTOR ANALYSIS OF VARIANCE 8
- two-factor ANOVA with equal replication
 - two-factor ANOVA with unequal replication
 - two-factor ANOVA without replication
 - nonparametric two-factor ANOVA
 - randomized block experimental design
 - multiple comparisons and confidence intervals
 - power and sample size in two-factor ANOVA
- UNIT #2:** DATA TRANSFORMATIONS 4
- logarithmic transformation
 - arc sine transformation
 - square root transformation
 - others
- UNIT #3:** MULTIWAY FACTORIAL ANALYSIS OF VARIANCE 8
- three-factor ANOVA
 - higher order factorial ANOVA
 - nonparametric multiway factorial ANOVA
 - factorial ANOVA with unequal replication
 - multiple comparisons and confidence intervals
 - power and size in multiway ANOVA
- UNIT #4:** NESTED (HIERARCHIAL) ANALYSIS OF VARIANCE 6
- nesting within one main factor
 - nesting in factorial experiments
 - multiple comparisons and confidence intervals
 - power and sample size
- UNIT #5:** SIMPLE LINEAR REGRESSION 4
- regression vs. correlation
 - testing the significance of a regression
 - confidence intervals
 - interpretations of regression functions
 - regression with replication: testing for linearity
 - power and sample size
 - data transformations
 - effect of coding
- UNIT #6:** COMPARING SIMPLE LINEAR REGRESSION EQUATIONS 4
- comparing two slopes
 - comparing two elevations
 - comparing two points of two regression lines
 - comparing more than two slopes

- UNIT #7: SIMPLE LINEAR CORRELATION 6
- correlation coefficient
 - hypotheses
 - confidence intervals
 - power and sample size
 - comparing two correlation coefficients
 - comparing more than two correlation coefficients
 - rank correlation
 - effect of coding
- UNIT #8: MULTIPLE REGRESSION AND CORRELATION 8
- multiple regression equation
 - analysis of variance of multiple regression correlation
- UNIT #9: THE BINOMIAL DISTRIBUTION 6
- binomial probabilities
 - sampling
 - confidence limits for proportions
 - goodness of fit
 - binomial test
 - sign test
- UNIT #10: THE POISSON DISTRIBUTION AND RANDOMNESS 6
- poisson probabilities
 - confidence limits
 - goodness of fit

TERM TESTS

Term tests will be written for a total value of 50% of the course grade. Term tests are accumulative.

HOMEWORK ASSIGNMENTS

Problems in the form of homework assignments will constitute the remaining 50% of the course grade. Certain of these problems will be solved using the Minitab data analysis system. Late assignments will be deducted 10% per day for every day late.

Students failing to submit homework assignments will receive an "I" for that assignment. Students with outstanding homework assignments at the end of the semester will be required to submit those assignments, although they will be valued at zero. Failure to submit outstanding assignments will result in an "I" grade for the course regardless of term test results.

Students failing two or more term tests will be required to write a final exam on the entire course content during the rewrite period. A passing grade is 60%.

Students receiving a grade of less than 60% based on term tests and homework assignments will be required to rewrite the unit test on which they performed the poorest during the rewrite period.