

A: Division: ACADEMIC DATE: March 26, 1990

 B: Department: SOCIAL SCIENCES New Course: _____

 Revision of Course
 information form: X

 DATED: OCTOBER 1975

 C: PSYCHOLOGY 300 D: DATA ANALYSIS IN PSYCHOLOGY E. 3
 Subject & Course No. Descriptive Title Semester Credit

F: Calendar Description:

 This course introduces students to the concepts and applications of statistics and focuses on the the analysis and interpretation of data from experiments and surveys using descriptive and inferential statistics. Computerized data analysis is also introduced.

Summary of Revision:
 (Enter date & section)
 Ex: Section C,E,F, & R

 C, D, F, G, J, K, N, O, P, Q, R

G: Type of Instruction: Hours Per Week/

Lecture	<u>4</u>	Hrs.
Laboratory	_____	Hrs.
Seminar	_____	Hrs.
Clinical Experience	_____	Hrs.
Field Experience	_____	Hrs.
Practicum	_____	Hrs.
Shop	_____	Hrs.
Studio	_____	Hrs.
Student Directed Learning	_____	Hrs.
Other	_____	Hrs.
TOTAL	<u>4</u>	HOURS

H: Course Prerequisites:
 PSY 200

I: Course Corequisites:

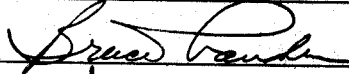

J: Course for which this course is a pre-requisite

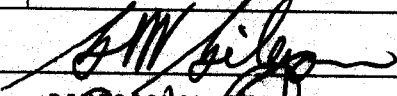
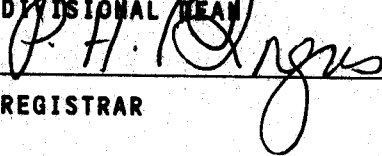
K: Maximum Class Size:
 35

L: College Credit Transfer X
College Credit Non-Transfer _____

M: Transfer Credit:
 Requested _____
 Granted X
 Specify Course Equivalents or Unassigned Credit as Appropriate

 U.B.C. PSY 300 (3) = PSY 200 together with PSY 400 (3)
 S.F.U. PSY 300 (3) = PSY 210
 U. Vic. PSY 300 (3) = PSY (1.5) 200 level


 COURSE DESIGNER(S)

 DIRECTOR/CHAIRPERSON


 DIVISIONAL HEAD

 REGISTRAR

**N: Textbooks and materials to be Purchased by Students
(Use Bibliographic Form):**

Norusis, Marija, (1988) SPSS/PC+ Studentware: Chicago, SPSS Inc.

or

Spatz, C. & Johnston, J.O. (1989) Basic Statistics: Tales of Distributions (4th Edition). Monterey, California, Brooks/Cole Publishing Co.

or some comparable textbook.

Text will be updated periodically.

Complete Form with Entries Under the Following Headings:

O. Course Objectives; P. Course Content; Q. Method of Instruction;

R. Course Evaluation

O. Course Objectives

At the conclusion of the course the student will be able to:

1. Distinguish between descriptive and inferential statistics.
2. Define various key statistical terms, such as population, sample, parameter, variable; a random sample and a sampling distribution; level of significance and critical value; Type I and Type II errors; the null hypothesis.
3. Define and describe various measures of central tendency.
4. Explain the concept of variability.
5. Calculate various statistics such as standard deviation, variance, Z scores, correlation coefficient (r), t-test, analysis of variance, chi square.
6. Distinguish between correlation and causation.
7. Explain the meaning and use of the regression equation.
8. Compute regression coefficients and fit a regression line to a set of data.
9. Distinguish between a theoretical and empirical distribution.

0. Course Objectives cont.

10. List the characteristics of the normal distribution.
11. Calculate confidence intervals about a sample mean and explain what they mean.
12. Explain the logic of inferential statistics.
13. Describe the factors that affect rejection of the null hypothesis.
14. Distinguish an independent-samples design from a correlated samples design.
15. List and explain the assumptions for the t-test and ANOVA.
16. Identify the independent and dependent variables in a one-way ANOVA and a two-way ANOVA.
17. Explain the rationale of ANOVA.
18. Define F and explain its relationship to t .
19. Compute sums of squares, mean squares, degrees of freedom, and F for an ANOVA.
20. Interpret an F value obtained in an experiment.
21. Construct a summary table of ANOVA results.
22. Distinguish between a priori and a posteriori tests.
23. Identify the sources of variance in a factorial design.
24. Compute F values and test their significance in a factorial design.
25. Interpret main effects and interactions.
26. Explain the relationship between magnitude of effect, statistical significant and sample size.
27. Identify errors of internal consistency and questionable statistical practices in Results sections of research articles in experimental psychology.

O. Course Objectives cont.

28. Describe the appropriate uses of the Chi square statistic.
29. Calculate the chi-square for both goodness of fit and independence of two variables.
30. Distinguish between appropriate use of parametric and non-parametric statistics.
31. Use computer software to carry out statistical analyses.

P: Course Content

1. Abuses of statistics
2. Organizing and describing data
3. Measures of central tendency
4. Measures of variability
5. Description of frequency distributions
6. Properties of normal distributions
7. Central Limit Theorem
8. Introduction to probability concepts
9. Hypothesis testing
10. Analysis of Variance and t-tests
11. Correlational methods
12. Regression and prediction
13. Nonparametric statistical methods
14. Statistical significance versus practical importance

Q: Method of Instruction

This course will employ a number of instructional methods to accomplish its objectives and will include some of the following:

- lectures
- audio visual materials
- small group discussion
- research projects
- computer based tutorial exercises

R: Course Evaluation

Evaluation will be carried out in accordance with Douglas College policy and will include both formative and summative components. Evaluation will be based on some of the following: quizzes, multiple choice exams, essay type exams, term paper or research project, computer based assignments, etc. The instructor will provide the students with a course outline listing the criteria for course evaluation. An example of one evaluation scheme:

12 quizzes	50%
Computer based homework assignments	10%
Homework exercises	10%
Term project paper	20%
Final Exam	10%
	100%

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