Douglas College

CURRICULUM GUIDELINES

A: Division: **INSTRUCTIONAL** Effective Date: **MAY 2004**

B: Department / **PSYCHOLOGY**
Program Area: **HUMANITIES & SOCIAL SCIENCES**

Revision | **X** | New Course |

If Revision, Section(s) **G, H**
Revised:
Date of Previous Revision: **JUNE 2001**
Date of Current Revision: **JANUARY 2003**

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

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

G: Allocation of Contact Hours to Type of Instruction / Learning Settings

Primary Methods of Instructional Delivery and/or Learning Settings:

Lecture

Number of Contact Hours: (per week /semester for each descriptor)

Lecture: 4 hrs. per week/semester

Number of Weeks per Semester: **15**

H: Course Prerequisites:

PSYC 200 and a C grade or better in BC Principles of Math 11 (or equivalent)

I: Course Corequisites:

NONE

J: Course for which this Course is a Prerequisite

NONE

K: Maximum Class Size:

35

L: PLEASE INDICATE**:**

	Non-Credit
	College Credit Non-Transfer
X	College Credit Transfer:

SEE BC TRANSFER GUIDE FOR TRANSFER DETAILS (www.bccat.bc.ca)

M: Course Objectives / Learning Outcomes

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

1. Distinguish between descriptive and inferential statistics.

2. Define various key statistical terms, such as population, sample, parameter, variable, random sample, sampling distribution, level of significance, critical value, Type I and Type II errors, and 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.

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 form 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 $\underline{F}$ and explain its relationship to $\underline{t}$.

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.

N: 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

O: Methods 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

P: Textbooks and Materials to be Purchased by Students

Aron, A. & Aron, E. N., (1999) Statistics for Psychology (2nd Ed.)
   Upper Saddle River, NJ, Prentice-Hall.

Howell, D. C., (1999) Fundamental Statistics for the Behavioral Sciences (4th Ed.)
   Pacific Grove, CA, Brooks/Cole.

Or some comparable textbook.

Text will be updated periodically.

Q: Means of Assessment

Evaluation will be carried out in accordance with Douglas College policy. Evaluation will be based on course objectives and will include 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.

Means of Assessment Cont'd.

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%

R: Prior Learning Assessment and Recognition: specify whether course is open for PLAR

No. Given that the course content involves theoretical and empirical analyses of statistics it is unlikely to be opened up for PLAR except as a credit transfer from another institution.

Course Designer(s):   Scott Wilson

Education Council/Curriculum Committee Representative

Dean / Director

Registrar