## **EFFECTIVE: MAY 2004**



PSYC 300

D:

C:

## **CURRICULUM GUIDELINES**

<b>A:</b>	Division:	INSTRUCTIONAL	Effective Date:	MAY 2004
В:	Department / Program Area:	PSYCHOLOGY HUMANITIES & SOCIAL SCIENCES	Revision X	New Course
	-		If Revision, Section(s) Revised:	G, H
			Date of Previous Revision: Date of Current Revision:	JUNE 2001 JANUARY 2003

DATA ANALYSIS I

## 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 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.