UNIVERSITY COLLEGE OF THE FRASER VALLEY

COURSE INFORMATION

DISCIPLINE/DEPARTMENT: Social, Cultural & Media Studies **IMPLEMENTATION DATE:** Jan. 1998

Revised: Sept. 1999

SCMS 355	Quantitative Methods	4
SUBJECT/NUMBER OF COURSE	**DESCRIPTIVE TITLE**	**UCFV CREDITS**

CALENDAR DESCRIPTION: An examination of measurement issues within sociological and anthropological research, focusing on the logical and conceptual construction and interpretation of tables, and an examination of the uses and abuses of statistics. Students will blend classroom knowledge of statistics with real life analysis of sociological data (including the use of computer software) to develop practical research skills. The course focuses on the application, rather than the mathematics, of statistics.

RATIONALE: The main aim of the course is to offer an opportunity to learn research tools commonly used in the social sciences.

COURSE PREREQUISITES: Math 104 or 106, and SCMS 255

COURSE COREQUISITES: None

HOURS PER TERM FOR EACH STUDENT	**Lecture**	**30**	**hrs**	**Student Directed Learning**		**hrs**
	Laboratory	**15**	**hrs**	**Other - specify:**		
	Seminar	**15**	**hrs**			**hrs**
	Field Experience		**hrs**	**TOTAL**	**60**	**HRS**

MAXIMUM ENROLMENT: 25

Is transfer credit requested? **Yes** **No**

AUTHORIZATION SIGNATURES:

Course Designer(s) Jean Ballard **Chairperson**: E. Davis

Curriculum Committee

Department Head: Jean Ballard **Dean**: J.D. Tunstall

PAC: Approval in Principle **PAC: Final Approval**: September 29, 1999

(Date) **(Date)**

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SYNONYMOUS COURSES:

(a) replaces Soc 355
(course #)

(b) cannot take Math 302 for further credit
(course #)

SUPPLIES/MATERIALS:

Students will need a basic hand-held scientific calculator.

TEXTBOOKS, REFERENCES, MATERIALS (List reading resources elsewhere)
One or more of:

Earl Babbie and Fred Halley, Adventures in Social Research: Data Analysis Using SPSS for Windows, Pine Forge Press, Thousand Oaks, CA, 1995.

Earl Babbie, The Practice of Social Research, Eighth Edition. Belmont CA: Wadsworth, 1998.

Daniel B. Wright, Understanding Statistics: An Introduction for the Social Sciences, Sage Publications, Thousand Oaks, CA, 1997

OBJECTIVES:

A course in quantitative methods for social researchers, Soc 355 has five main objectives:

1. The course is designed to provide a basic understanding of quantitative social research methods.
2. Students will be provided the opportunity to practically apply the methods introduced in the course.
3. Students are introduced to the use of computers for the organization and analysis of social science data.
4. The course aims to enable students to more effectively read and critique sociological literature that employs quantitative data.
5. The course is designed to prepare students for more advanced courses in quantitative methods.

METHODS:

Lecture, seminar discussions, computer exercises.

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STUDENT EVALUATION PROCEDURE:

4 equally weighted assignments	40%
Midterm exam *	30%
Final project **	30%

* The examination will consist mainly of defining key statistical terms, multiple-choice questions, and short answer problems. The examination will be written without the aid of a computer and course notes and texts (i.e., it is a closed-book test). Hence, the student will need a basic hand-held calculator to write this examination.

** Students will complete a simple personal research project applying at least one of the methods learnt during the course to the solution of a real-data problem.

COURSE CONTENT

The use of statistics in the social sciences: an overview.

Review of sampling, conceptualization and measurement, reliability and validity, operationalization, research design.

Introduction to SPSS Windows: its uses, strengths, limitations

Survey research: Indexes, Scales and typologies, including Thurston, Likert & Guttman scaling.

Introduction to regression: review of simple linear least-squares regression. Multiple linear regression, explanation of the software output, interpretation of the estimated equation, the coefficient of determination, inference for coefficients, the residual variance, prediction means, prediction points, the ANOVA table, the appropriate degrees of freedom (DF), the sequential sums of squares, F-tests. (case study)

Checking assumptions: examination of residuals, Q-Q plots, outliers, points of influence, auto-correlation. Approximate means and variances. Approximate transformations to normality. (case study)

Correlation: test that the (partial) correlation coefficient is zero. Discussion of Fisher's z-transform.

Indicators: use of indicator or dummy variables to represent categories.

Simple experimental designs: paired experimental designs. The randomised block design; its purpose and analysis. The two-way factorial design; the additive model; interaction; replication. The interpretation of interaction. The unbalanced two-way design. Comparison of simple regression lines. Simple analysis of covariance in one-way designs; adjusted means, and related inference.

Frequency data: analyses of frequency data by weighted regression using asymptotic chi-squared approximations. The test for assigned probabilities, the test for independence in contingency tables, correlated binomials. Simple test of an assigned distribution, based on grouped data, the goodness-of-fit test. Logistic regression. The chi-square indices of dispersion for binomial data.