

Quantitative Methods in the Social Sciences

QM 360-300-re

Contact hours: 60

2-2-2

Level 1

Instructors:	Manoj Caleekal, office # 267, voice mail 401, mcaleeka@slc.qc.ca Martin Huard, office #318, voice mail 370, mhuard@slc.qc.ca Fred Martin, office #357, voice mail 364, fmartin@slc.qc.ca Gordon Brown, office #319, voice mail 260, gbrown@slc.qc.ca
Office Hours:	As posted outside your instructor's office.
Suggested Text:	Brase, C.H. and C.P. Brase. <u>Understanding Basic Statistics</u> 3 rd ed.. Boston: Houghton-Mifflin, 2004, accompanied with the <u>Excel Guide</u> . Readings and teachers' notes may be provided during the semester.
Statement of the competency:	To apply statistical tools to the interpretation of data related to contexts of study in the field of Social Science.
Elements of competency:	<ol style="list-style-type: none">1. To situate the analysis of data, and more specifically its interpretation, within the scientific approach used in Social Science.2. To present the data in satisfactory form.3. To analyze data using various forms of measurement.4. To determine the nature and intensity of the link between the variables.5. To estimate the parameters of a given population based on the corresponding statistics obtained from a sample.
Specific Objectives:	<p>The Quantitative Methods course introduces the student to the quantitative and statistical procedures used in studying humanity and society. By the end of the course the student will be able to determine the place of statistics in the Social Sciences and be familiar with the fundamental concepts and techniques of statistics in applied social science research. Moreover, the student will be able to interpret the statistics they encounter in the context of social science research as well as those encountered in everyday life.</p> <p>The introduction to statistical analysis provided by this course includes: the basic concepts underlying the various techniques; basic vocabulary, rules, and guidelines for using the techniques; procedures for the calculation of the appropriate measures; significance and meaning of results obtained; and guidelines for the interpretation of the results. The course will contribute to the understanding and knowledge necessary: for the selection and application of appropriate quantitative methods and techniques for specific research situations; for an appreciation of the limitations of the techniques; and for the realistic interpretation of the social science research obtained through the use of statistical techniques.</p> <p>The student will also be introduced to the use of the calculators, computers and statistical software available for application in the social sciences. In fact a hands-on approach involving the use of such tools will be used throughout the course.</p>
Attendance:	Attendance is required. As per Campus policy, absences for more than 10% (i.e. 3) of the classes may result in denial of the right to complete the course.
Rules & Regulations:	St. Lawrence Campus has definite regulations concerning cheating, plagiarism and the quality of written English which are clearly indicated in the Student Handbook and the St. Lawrence Campus Prospectus. It will be assumed that all students have read and understood these rules and regulations.

Assignments are due at the beginning of the class on the date specified. If the material of the assignment is covered during class on the day due, those submitted late will be refused; in other cases they will be penalized 50% for each day, or part day, late. (Note that submission after class is considered late and will be penalized).

All work will be graded on clarity and correctness of the language as well as on the concepts used. Up to 15% of your mark could be taken out for the quality of the English.

The students can take advantage of the English workshops and peer tutoring service offered at the school.

Course Method:

Class time is divided in two parts: for about two hours a week, the teacher introduces the theoretical material through lectures and problems solving on the board. For the other two hours, students have to complete problems, by hand and on the computer, under the teacher's supervision.

Evaluation:

Quizzes/ Lab exercise: Quizzes will be frequent, short, covering small amounts of material, and numerous. No makeup quizzes will be permitted during the term. However, the quiz with the lowest mark will not count. Due to the frequency of quizzes, attendance at all classes is extremely important. A lab exercise on Quantitative Methods and the Social Sciences may replace some of the quizzes.

In the event that the college closes or the teacher is absent on an assignment due date or a scheduled test date, the due date or test is moved to the next school day automatically.

Midterm Exam: There will be one midterm exam during the week before the reading week. A student missing the midterm will automatically be given the result "0" unless he/she has a very good reason AND has given prior notice to the teacher.

Final Exam: There will be a three hours comprehensive final examination at the end of the semester.

Breakdown: The final grade will be calculated as follows:

	<u>Final Grade</u>
Quizzes and Assignments	40%
Midterm Examination	20%
Final Examination	40%

Course Content:

<p>Week 1 & 2: Introduction</p> <p>SOCIAL RESEARCH AND STATISTICS Science and Social Science The Steps of Social Research Quantitative Methods and Statistics</p> <p>INTRODUCTION TO THE TOOLS The Computer Microsoft Excel Other Tools Review of basic math</p> <p>Week 3 & 4: Exploring Data: Distributions Data and Variables. Basic operations: proportions, percentages, rates and ratios Displaying and Describing Distributions. Measures of Central Tendency. Measures of Dispersion. Comparing Distributions.</p> <p>Week 5 to 7: Exploring Data: Relationships Graphical Displays of Association. Correlation and Regression.</p>	<p>Week 8 to 11: Samples, Populations, Surveys and Polls Samples and Sampling Methods. Probability and the Normal Distribution. Random Sampling and the Sampling Distribution. Confidence and Interpretation.</p> <p>Week 12 & 13: Inference from Data Null Hypothesis / Research Hypothesis. Type I and Type II Errors. Levels of Significance. Statistical Tests. One-tailed or two-tailed tests. Chi-square.</p> <p>Week 14: Indexes and Rates Definitions and types of Indexes. Interpretation of Indexes. Interpretation of Rates.</p> <p>Week 15: Review</p>
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