Sociology/Nursing 300 - Research Methods
St. Francis Xavier University
2012-13

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Office hours:
Monday 10-12 &1-3
Wednesday 11-12 &1-3
Or by appointment

The purpose of this course is to learn how to conduct <u>quantitative</u> research using the Statistical Package for the social sciences (SPSS).   To develop your research skills you will participate in ten computer laboratories as you work with an exiting data set designed to develop your SPSS skills. You will use the skills you acquire in the labs to conduct your own survey research. You will learn how to prepare surveys, collect data and analyze the results. You will also get an introduction to statistics. You will learn about the strengths and limitations of various methods, how to conduct research and how to evaluate existing research.   Learning about research methods enhances students' ability to critically appraise research and to conduct their own research.

Course Goals The main goals for this course are to be able to:
1. Read and understand academic research articles
    * Be able to find and understand quantitative research articles in your area of study in related academic journals.
    * Evaluate and discuss current research findings in your area of study
2. Set up and carry out academic research projects
    * Be able to discuss basic theories
    * Define key terms in scientific research such as hypothesis and independent variable
    * Identify appropriate data collection technique(s) for a given research problem
    * Understand ethical situations that might arise in the research process
    * Design a research project - indicating hypotheses, best data collection method, best way to analyze data
    * Conduct a group research project using surveys (and/or content analysis)
3. Do basic statistics procedures using SPSS (including picking the right test for the given problem and data)
    * Perform statistical tests on a provided dataset using SPSS (and on your own data in your group project)
    * Interpret results of statistical tests
4. Write academic research article using results of quantitative analysis
    * Write an academic research report including a literature review, methods section, statistical analysis, and complete bibliography.
    * Communicate effectively in writing and orally about quantitative research - including about statistics

Required Readings:

Winston Jackson and Norine Verberg (2007). *Methods: Doing Social Research*. (4th Edition) Prentice-Hall Canada, Inc..

Additional Material will be available on RESERVE, electronically and at: www.stfx.ca/people/dmacdona
 Recommended manual: PASW Statistics 18 Statistical Procedures Companion by Marija J. Norusis

Evaluation:

Assignments/Participation	10%
Lab Assignments	15%
December Exam	25%
Research Paper	25%
Final Exam	25%

<u>Participation:</u>   You will be required to attend classes regularly and to do in class participation assignments. To do well in this course you will need to <u>take class notes</u> in addition to knowing the material from the assigned chapters and readings. While most of the material discussed in class will come from the assigned readings, I will also supplement my lectures with other relevant material.

Course Requirements

1. **Assignment 1:** Choose a relationship that you think would hold true and propose three alternative explanations for the relationship. Connect your proposed explanations to an existing social science perspective. Outline a study which would allow you to reject the various explanations? Draw relationship diagrams. Required reading Chapter 1 and 2 **DUE: September 17. INDIVIDUAL REPORT (2-3 pages).**

2. **Assignment 2.** A literature review will be coordinated for your group. You will be responsible for finding suitable articles for your group project and writing up a detailed review of the literature. You should examine both quantitative and qualitative research. You should focus on the dependent variable while considering the independent variables. You will discuss the variables you will focus one. These individual reviews will be merged in the group review of literature for your final paper. It is recommended that group members focus on particular variables so as to not overlap. **DUE: October 15. INDIVIDUAL REPORT. (6-8 pages)**

3. **Assignment 3. Research Proposal/Research Ethics approval**. **Questionnaire.Class presentation.** (This will be graded – and valued at 25% of your final paper) One of two models of research may be proposed by your group: A) Testing a theory: utilizing the replacement of terms and/or axiomatic derivations, derive a testable hypothesis which is not obvious (in common sense terms) but which, in your view, is worthy of empirical examination. B) Choose a dependent variable and propose a number of independent variables which may be influencing variation in the dependent variable (Relationship diagram see Figure 12.2 Chapter 12). Select one of the independent variables and propose alternative explanations (either or both of intervening or sources of spuriousness variables) for the link between the independent and dependent variables. Specify the assumptions which underpin each of the proposed intervening variable explanations.

    You will submit an ethics approval form for your project. An ethics approval form will be provided to each group which will be submitted for departmental approval. For the approach selected: (1) in one page introduce your topic; (2) present a detailed causal model showing all the relationships you propose to examine; (3) indicate how the major dependent variable will be measured; (4) what population would be studied; (5) what data processing techniques would be employed; (6) indicate the date when you propose to complete each part of the study. Submit a questionnaire based on your causal model **DUE: NOVEMBER 5. GROUP REPORT** (class presentations, **November *5 & 7).** (*The ethics may not be approved without changes so the sooner this is submitted, the better chance you will have of being on time – expect a week to get this back after each submission.) It is also very likely that the questionnaire will have to be changed after it is submitted. You will not be permitted to distribute a sub-standard questionnaire. The construction of the questionnaire is the most important part of the research process as it will determine the direction of the paper. Assignment 2 & 3 will be graded – and valued at 25% of your final paper.

4. **Statistics assignments** – small statistics exercises will be assigned prior to the class where the topic will be discussed.

5. **SPSS labs.** In addition to the above, SPSS labs are to be completed spanning both terms. These are required to enable students to complete their project analyses.

6. **Major Paper Presented (possible poster presentation at student research day)** A handout will provide detailed instructions for the preparation and submission of this paper. On the due date, submit a copy of your individual research report to the instructor and keep a copy for yourself (or submitted a second for comments). One copy will be retained by your professor. Details of this report will be discussed in class and with the various research groups. **DUE: March 11. INDIVIDUAL REPORT** (class presentation - March 18, 20, 25, 27 OR Student Research Presentation (Mid March) *Early papers received on or before March 4 will receive a 5% bonus.

7. **Examinations.** The examinations cover the assigned readings, labs, and lectures. Each exam has section containing: multiple choice questions, short-answer (definition) questions, essay questions, and SPSS questions. (See BANNER for time and place)

FIRST TERM Chapters 1-4, 8,9, 12,13,14
Additional electronic readings or websites may be provided .

September 5
Introduction to course and expectations/Introduce Timeline

September 10
Intro to research - theories
Methodological approaches

September 12

Types of variables, Theoretical models
(Chapters 1,2, & 13)
*Submit names of people in your group.

September 17
Theoretical models con't
Conceptual & Operational variables (Chapter 13)

September 19
Levels of measurement (Chapter 8)
Experimental design (Chapter 3)

September 24 (September 25- Lab 1 – Instructor: Lisa Smith)
Overview of SPSS – Statistical Package for the Social Sciences
http://en.wikibooks.org/wiki/Using_SPSS_and_PASW
*Submit research topics

September 26
Experimental design Con't

October 1 (October 2 - Lab 2)
Introduction to Statistics, Descriptive statistics, univariate analysis, Measures of central tendency
(Chapter 8)
Introduce Research and null hypothesis – lab prep (Chapter 9)

October 3
Introduction to statistics con't

October 8 (No Class – Thanksgiving) Also no lab this week

October 10
Survey and questionnaire construction (Chapters 4 & 14)

October 15 (October 16 – Lab 3)
Survey and questionnaire construction (Chapters 4 & 14) con't
Indexes (Chapter 13)

October 17
Normal curve, Z-scores, intro to probability theory (Chapter 8)

October 22 (October 23 – Lab 4)
Contingency tables (Chapter 8)

October 24
Means analysis (chapter 8)

October 29 (October 30 –Lab 5)
Correlations (chapter 8)

October 31
Introduce Ethics guidelines (Chapter 11)
Reading: *Tri-council Ethics policy* (available on my w: drive)

November 5 (November 6 – Lab 6)
Computing new variables (brief introduction)
*submit group report
Present group report

November 7
Present group report

November 12 (November 13 – Lab 7)
Reliability & validity (chapter 13)

November 14
Tests of significance Introduction (Chapter 9)

November 19
Chi square (Chapter 9)

November 21
t-test (Chapter 9)

November 26
F test, Anova, means (Chapter 9)

November 28
Exam Review

SECOND TERM Chapters 5, 7-10,11, 16-18
January 7 (no Lab 1st week)
Where are we in our research process? Where do we go next? Questions,

LAB DATES: January 15, Lab 8; January 22, Lab 9; January 29, Lab 10)
Detailed schedule to follow in January.

TIMELINE:

- Select group – Due: September 12 (submit names)

- Submit Group topic Due: September 24 with a brief description of your anticipated research and list of at least 6 references. (consider the population you will be researching – e.g, students at St. FX)

- Conduct a review of literature Due: October 15 (start questionnaire construction)

- Prepare a causal model (the base for your questionnaire) which is based on a review of literature (for Nov. 5)

- Prepare your questionnaire (for Nov. 5)

- Ethics form (the questionnaire must be completed and submitted with the ethics form).

- It is expected that groups meet with the professor during office hours to discuss the research and to get feedback especially when constructing the questionnaire. Starting in October.

- Recruit subjects. (late November). (Talk to profs (or other authorities) to recruit subjects

- Early January distribute & collect final questionnaires. *Note: you may not distribute questionnaires until you get ethical approval. (Enter data as you collect the questionnaires)

- Data entry should occur prior to your final lab (January 29) as data entry is part of your lab.

- February – Data analysis and discussion of data completion of final paper.

- March submit and present findings. In class – March 18-27 OR Poster presentation Student research day – March 21, 2013