This is a synopsis of the course syllabus intended to provide an overview of the course. Please note that details of the course may change from semester to semester and that the syllabus used during a given semester takes precedence over this summary.

**General Course Description**

In OPWL 531, you will learn how to design research and apply statistical analysis methods to conduct quantitative studies in organizational contexts. You will also review various empirical research reports in order to become educated consumers of research and contribute to improving organizational performance. **PREREQ: OPWL 536 or PERM/INST.**

The course is designed with the following module structure:

1. Quantitative research
   - Research questions
   - Variables
   - Hypotheses

2. Descriptive statistics
   - Measurements
   - Assumptions for statistics
   - Descriptive statistics

3. Testing instrument reliability
   - Inter-rater reliability
   - Internal consistency in survey questions
   - Internal consistency in Knowledge test questions

4. Testing for relationship among variables
   - Crosstabs
   - Correlation
   - Simple linear regression
   - Multiple linear regression

5. Comparing group differences
   - Paired samples t-test
   - Independent samples t-test
   - One-way analysis of variance

6. Writing a research proposal
   - Your own research plan

Throughout the course, OPWL 531 will provide you with hands-on practices using a statistical software (SPSS), in order to help you be able to perform various statistical procedures to test research hypotheses and to interpret the results and draw conclusions.

**Course Goals**

This course is intended to help you accomplish the following objectives:

1. Define quantitative research.
2. Identify research problems in organizations.
3. Explain independent and dependent variables.
4. Write research questions and null hypotheses.
5. Prepare datasets in SPSS.
6. Differentiate nominal, ordinal, and scale (interval and ratio) types of measurement.
7. Explain skewness and kurtosis associated with a normal curve.
9. Recognize a set of assumptions for different statistical procedures.
10. Describe the difference between parametric tests and nonparametric tests.
12. Given data, test internal consistency of multiple survey questions that are designed as a construct.
13. Given data, test internal consistency of knowledge exam items.
14. Recognize workplace applications for testing instrument reliability.
15. Given data, test for association among nominal- or ordinal-type variables.
16. Critique research conducted with crosstabulations.
17. Given data, test for correlationship among ordinal- or scale-type variables.
18. Critique research conducted with correlation.
19. Given data, predict a variable based on another variable with simple linear regression.
20. Given data, predict a variable based on multiple variables with multiple linear regression.
21. Critique research conducted with simple and multiple linear regression.
22. Given data, compare differences between two repeated/paired groups.
23. Critique research conducted with paired samples t test.
24. Given data, compare differences in the effectiveness of two independent groups.
25. Critique research conducted with independent samples t test.
26. Given data, compare differences in the effectiveness of more than two groups.
27. Critique research conducted with one-way analysis of variance.
28. In workplace situations, identify research-potential areas for improving performance.
29. Conduct a literature review to support a research plan.
30. Write a research proposal using an appropriate statistical procedure(s).

**Course Assignments**

**Class Participation**

Each week, you are expected to complete a couple of hands-on activities to run statistical analyses with SPSS. You are also expected to actively participate in class discussions. The following criteria will be used to evaluate the quality of your weekly class participation.

1. Posted a required startup msg(s) by the deadline as instructed in the read-me-first document.
2. Quality of the startup msg met the expectations (e.g., accuracy, completeness).
3. Participated in discussions in at least 2 different days.
4. Posted 2+ msgs during the week (i.e., if you are asked to post two startup msgs, you would be expected to post a minimum of 4 msgs in total, including the startup msgs).
5. Participated in different discussion threads (not just under your own msg thread).
6. Posted msgs with valuable info, reflective comments, or helpful feedback, which add value to graduate-level discussions.

**Knowledge Test**

A knowledge test will be administered at the end of the course. The knowledge test consists of short-answer questions (involving actual statistical analyses) as well as some true/false, multiple-choice, and matching-items questions, measuring your understanding of the main concepts and applications, as indicated in the course goals and objectives. It is an open-book test, but you shouldn't seek help from other people in solving problems. You will be given a week to complete the test.

**Research Proposal**

You will select a research topic of your own, and submit a quantitative research proposal, containing
the following sections:
1. Title page
2. Introduction
3. Research methodology
4. References

The research topic should be selected from the ‘organizational performance and workplace learning (OPWL)’ context. The presented research problem should be worth answering. Research questions and null hypotheses should be clearly stated. Research design and statistical procedure should be properly selected to answer the proposed research questions (Note: If desirable, you may use mixed research methods including quantitative and qualitative research methodology; however, quantitative research methodology should be clearly described.). When citing literature and presenting references, APA style should be used. The expected length of the proposal content is about 1000 words, including the title and references.

Time Required

A general rule of thumb is that you should expect to invest approximately 45 hours per credit during a semester. OPWL 531 is a 3-credit course. This means that you should expect to invest approximately 135 hours (45 x 3) on this course. This translates to approximately 9 hours per week (135 ÷ 15). Remember that this is an approximation. You might spend more or less time on the course depending on your relevant work experience and your familiarity with the content.

Prerequisite

OPWL 536 or PERM/INST.
Note: This course does not require you to have any prior knowledge or experience of conducting research or advanced math skills. However, it is necessary that you have interest in learning about how quantitative research methods can be used in the context of performance improvement and workplace learning. This course will also help you build foundational knowledge and skills necessary to complete a thesis as your culminating activity, if selected.