

## **COURSE SYLLABUS**

### **Trinity Western University Psychology/Sociology 207: Data Analysis Summer 2017**

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Prerequisites: PSYC 105 & 106 or SOCI 101

#### **COURSE DESCRIPTION:**

The logic and the application of data analysis techniques suitable for the behavioral sciences. Descriptive statistics and inferential statistics, including measures of central tendency, variability, probability and sampling theory, correlation, regression, and non-parametric statistics.

#### **OBJECTIVES:**

This is a course on statistics and data analysis for social and health science students. The importance of statistics as a data analysis tool is emphasized. Although statistical techniques are presented, it is done within a broad data analytic framework. The statistical analysis on each topic is explained, but also why and when in the analytic process it should be done. Practical applications of the material are covered, as well as how to report and understand statistical information in a research article. The Statistical Package for the Social Sciences (SPSS) is used for the analysis of larger data sets.

Specific course objectives include the following:

1. Understanding the place and value of Statistics;
3. Grasping the purpose of and the reasoning behind common statistical indices and procedures;
4. Becoming aware of the dangers of using Statistics unwisely;
5. Selecting and applying appropriate descriptive and inferential techniques in the analysis of data;
6. Using SPSS for conducting statistical analyses.

#### **MATERIALS:**

The reference material includes the following:

- Statistics for Psychology, Sixth Edition, by Arthur Aron; Elliot J. Coups; Elaine N. Aron
  - ISBN-13: 9780205258154

In addition, students will need a basic scientific calculator, and access to SPSS (the student version is sufficient and is installed on most TWU desktops). Any additional information/resources will be provided on the course website.

**TOPICS:**

Topics that will be discussed may include the following:

- Graphical and tabular representation of data
- Central tendency and variability
- Statistical inference,  $z$  scores and confidence intervals
- Hypothesis testing
- $t$  Tests
- Analysis of Variance
- Chi Square tests
- Correlation and Risk Indexes
- Regression
- Factorial analysis of variance

**QUIZZES:**

There will be a brief quiz at the end of each chapter, to help students gauge their knowledge on the topics. The questions will be paper-based multiple choice and short answer questions similar to the examples. The quizzes will contribute 10% to the final grade.

**HOMEWORK ASSIGNMENTS:**

Following a demonstration on how to use SPSS for the topics discussed in each chapter, students will have to use the software to answer practical questions on larger data sets. This forms an important link between the textbook material learned and the practical application of the concepts. The homework assignments will contribute 30% to the final grade.

**GRADING:**

The final grade will be calculated as follows:

Quizzes	10%
SPSS Homework Assignments	30%
Midterm	30%
Final Exam	30%

### ***Supplement:***

#### **Campus Closure**

In the event of deteriorating weather conditions overnight or other emergency situations, every effort will be made to communicate information regarding the cancellation of classes to the radio stations CKNW (980 AM), CKWX (1130 AM), MAX (850 AM), PRAISE (106.5 FM) and KARI (550 AM) by 6:30 a.m., and an announcement will be placed on the University's switchboard as well as on the website <http://www.twu.ca/conditions/>. The first announcement regarding a closure will cover the period up to 1:00 p.m. only. If classes are to be cancelled beyond 1:00 p.m., this decision will be announced by the same means before 11:00 a.m. that day. Students and faculty should assume that all night classes will continue to operate. If the emergency continues into the evening, students and faculty may check for a closure notice on the University's switchboard and website after 3:00 p.m. that day.

#### **Research Ethics**

Please note that all research projects involving human participants undertaken by members of the TWU university community **MUST** be approved by the Trinity Western University Research Ethics Board. Information and forms may be found at <http://www.twu.ca/academics/research/ethics/>. Please allow at least three (3) weeks from the date of submission for a review of the application.

#### **Academic Integrity and Avoiding Plagiarism at TWU**

As Christian scholars pursuing higher education, academic integrity is a core value of the entire TWU community. Students are invited into this scholarly culture and required to abide by the principles of sound academic scholarship at TWU. This includes, but is not limited to, avoiding all forms of plagiarism and cheating in scholarly work. TWU has a strict policy on plagiarism (see academic calendar 2008-09, pp. 37-38).: [www.acts.twu.ca/Handbook.html](http://www.acts.twu.ca/Handbook.html).

Learning what constitutes plagiarism and avoiding it is the student's responsibility. An excellent resource describing plagiarism and how to avoid it has been prepared by TWU Librarian William Badke and is freely available for download (PPT file) or used as flash (self-running) tutorials of varying lengths from:

<http://www.acts.twu.ca/lbr/plagiarism.ppt>

<http://www.acts.twu.ca/lbr/Plagiarism.swf> (14 minute flash tutorial)

[http://www.acts.twu.ca/lbr/Plagiarism\\_Short.swf](http://www.acts.twu.ca/lbr/Plagiarism_Short.swf) (8 minute flash tutorial)

**This document is prepared before the beginning of the course. It is possible that some of the information in it will have to be modified before the course ends. Any such changes will be announced in class and on the course web page. It is the student's responsibility to be aware of any such changes.**