

ADLER GRADUATE SCHOOL

Richfield, Minnesota

AGS Course 501

Psychological Statistics and Psychometrics

1. Course Designation and Identifier

- 1.1 Adler Graduate School
- 1.2 #501
- 1.3 Psychological Statistics and Psychometrics
- 1.4 Three quarter credits
- 1.5 Prerequisites: None

2. Course Description

Covers the basics of statistical theory and process. Areas covered include reliability and validity as well as the difference between qualitative and quantitative research methods and applications. Students should leave with an understanding of how to construct a basic research design and how statistics impacts that design. Students will also be able to approach all scholarly work with a critical eye for its strengths and limitations due to the statistics presented.

This course deals with the basic concepts of Psychometrics. The course will explain the origins function and value of psychological testing. The course will cover the concepts of reliability and validity of tests. The course will focus on understanding the implications of reliability and validity on the value of the test. The tests to be covered include intelligence assessment, personality testing, and relationship instruments. The social, legal & ethical implications of testing will be addressed. Methods of test construction will be explored including rational vs. empirical test development. The controversial aspects of test administration will be addressed.

3. Text, Materials, and Resources (required and optional)

3.1 Required texts:

Pyrczak, Fred: Success at Statistics, 3rd ed., Glendale, CA, Pyrczak Publishing, 2004.

Kaplan, Robert M. and Saccuzzo, Dennis P.: Psychological Testing: Principles, Applications, And Issues, Brooks/Cole, 1997, Fourth Edition

3.2 Optional reading:

Cattell, Raymond and Johnson, Ronald: Functional Psychological Testing: Principles and Instruments, 1986.

Corcoran, Kevin, and Fisher, Joel: Measures for Clinical Practice: A

Source Book. New York. The Free Press, 1987.

Gabel, Stewart; Oster, Gerald, and Butnik, Stephen. Understanding Psychological Testing in Children: A Guide for the Health Professional. 1986.

Sherman, Robert and Friedman, Norman: Handbook of Structured Techniques in Marriage and Family Therapy. 1986.

4. Competencies and Learning Outcomes

Students in this course learn:

- 4.1 Gain basic knowledge of statistics. (7b)
- 4.2 Understand basic concepts of statistics to include reliability and validity. (7d,7e)
- 4.3 Describe data using appropriate scales of measurement and characteristics of said data.(7c)
- 4.4 Understand the distribution of data on a graph and the many ways to present that data to the professional community.(7c,7g)
- 4.5 Learn the difference between qualitative and quantitative research methods and applications.(8b)
- 4.6 Understand the impact of statistical analysis on research and how to employ that in a basic research design.(8c)
- 4.7 Show the ability to utilize their knowledge of statistics to critically read research for the strengths and limits of the research based on the statistical design and analysis.(7f, 8a,8d)
- 4.8 Adhere to APA standards when presenting information to the class or instructor.(8f)
- 4.9 Gain basic knowledge of the concepts of Psychometrics.(7a)
- 4.10 Understand of the function and origin of testing.
- 4.11 Student will be knowledgeable about various tests and their applications.
- 4.12 The student will have a basic understanding of the process of test interpretation.
- 4.13 Understand and have an appreciation for the ethical, legal and multicultural implications of testing.

5. Course Outline

5.1 Unit 1

Introduction; Why Statistics is important in Psychology.
The Basics- Appendix A.
Descriptive Statistics
Mean, Median, and Mode- Pg. 51-68 (Pyrczak)

- 5.2 Unit 2
Standard Deviation and the Normal Curve- Pg. 69-102 (Pyrzczak)
Correlation/Pearson's r and Linear Regression- Pg. 103-154 (Pyrzczak).
Sampling/Probability- Pg. 155-180 (Pyrzczak).
- 5.3 Unit 3 (Saturday)
Standard Error of Mean/Confidence Interval- Pg. 181-194 (Pyrzczak).
Null Hypothesis and t Test- Pg. 194-248 (Pyrzczak).
ANOVAs- Pg. 249-286 (Pyrzczak).
Significance of Variances/Chi Square- Pg. 287-342 (Pyrzczak).
Descriptive/Inferential Statistics- Pg. 343-380 (Pyrzczak).
- 5.4 Unit 4 (Saturday)
See Unit 3
- 5.5 Unit 5 (Tuesday)
History of Tests Pg. 1-24 (Kaplan).
Characteristics of a Test Pg. 25-60 (Kaplan).
Standardization, Reliability and Validity Pg. 62-155 (Kaplan).
- 5.6 Unit 6 (Tuesday)
Administration and Scoring Pg. 157-199 (Kaplan).
Test Construction(Kaplan).
Intelligence Tests Pg. 230-275 (Kaplan).
- 5.7 Unit 7 (Saturday)
Personality Assessment and Tests Pg. 347-420 (Kaplan).
Structured Personality Tests
Projective Personality Tests
- 5.8 Unit 8 (Saturday)
See Unit 7
- 5.9 Unit 9 (Tuesday)
Controversial Issues in Testing Pg. 538-571 (Kaplan).
Interests, Values and Attitudes Pg. 611-633 (Kaplan).
General guidelines for test utilization(Kaplan).
Legal and Ethical Issues(Kaplan).

6. Special Project Time (SPT)

Special Project Time (SPT) allows students the opportunity to integrate course materials. SPT is meant to be a self-contained, 15 hour experience, requiring no more than 15 hours to complete. SPT generally focuses on either (a) an experiential exercise paired with an integrative writing component or (b) a research exercise and a short integrative writing component.

An integrative, SPT experience can be based on an individual project or a group project. Once again, the individual or group completes an experiential or a research oriented exercise, followed

by a short integrative writing assignment. This should all be planned within the context of a 15 hour student expectation.

SPT experiences may be constructed in such a way that they pertain to students' unique degree plans. For example, Licensed Marriage and Family Therapist students, Licensed Professional Counselor students, and Licensed School Counselor students might construct a SPT experience unique to their chosen disciplines. This is done in consultation with the course instructor.

7. **Writing Guidelines including APA Format**

All written assignments in courses at the Adler Graduate School must be in APA format unless specifically noted by the course instructor (*Publication Manual of the American Psychological Association* (5th edition), 2001, American Psychological Association. ISBN 1-55798-791-2).

8. **Assessment/Evaluation Procedures**

8.1 Credit is given to the students who successfully meet all of the requirements at the level of proficiency acceptable to the instructor.
The evaluation is based on the following:

8.2 Statistics Exam (50 questions, take-home). (25 points)

8.3 Psychometrics Exam multiple choice, open book (50 questions, proctored). (25 points)

8.4 Take home written project (Test Battery). (15 points)

8.5 Special Project Time (25 points)

For this course research and create a power point presentation on one diagnostic test from an approved list. Include all appropriate psychometric properties of the test and the populations targeted by said test.

8.6 Class participation (instructor evaluation). (10 points)

It is expected that students will complete all reading assignments, do an in class presentation and a written take home project. The class is graded on a curve, starting from the high score for the class.

Time and page limits on assignments are for educational purposes. Please adhere to them as closely as possible. You will be graded on your ability to meet these expectations.

8.7 Grading:

A	90-100 points
B	80-89 points
C	70-79 points

9. **Attendance Policy**

Students are expected to attend all class meetings. When a student is unable to attend class, it is a courtesy to notify the course instructor in advance using either e-mail or phone.

10. **Participation Disclaimer**

Active participation in class discussions/exercises/demonstrations is encouraged. As with other AGS courses, in this course, individual students must determine for themselves the level of disclosure/intimacy that is appropriate for them.

Whenever confidential information/material is used in any AGS course, students and faculty members are expected to observe AGS policy concerning the handling of confidential information/material. Full descriptions of these policies are readily available.

11. **Academic Integrity Policy**

Honesty and trust among students and between students and faculty are essential for a strong, functioning academic community. Consequently, students are expected to do their own work on all academic assignments, tests, projects, and research/term papers. Academic dishonesty, whether cheating, plagiarism, or some other form of dishonest conduct may result in failure for the work involved. Academic dishonesty could also result in failure for the course and, in the event of a second incident of academic dishonesty, suspension from the Adler Graduate School. Here are examples of academic dishonesty:

- Cheating - Intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise. The term academic exercise includes all forms of work submitted for credit.
- Fabrication - Intentional and unauthorized falsification or invention of any information or citation in an academic exercise.
- Facilitating academic dishonesty - Intentionally or knowingly helping or attempting to help another to violate a provision of academic integrity.
- Plagiarism - The deliberate adoption or reproduction of ideas or words or statements of another person as one's own without acknowledgment.

12. **Internet/On-Line Activity**

On-line components Adler Graduate School classes provide an opportunity for open and insightful dialogue. As in face-to-face discussions, there are differences in opinions concerning topics discussed. We view these differences as welcomed attribute of a good scholarly discussion. Respect for differences will also be viewed as a sign of scholarly debate.

Following are guidelines governing on-line discussions:

- Never post content that is known to be illegal. Never post potentially harassing, threatening, or embarrassing statements, as well as statements that might be potentially offensive and seen as disrespectful in any way.
- Faculty members monitor discussion and intervene when requested or as deemed necessary.
- On-line communication presents a significant level of ambiguity, as verbal content of

communication is not well supported by its non-verbal (including contextual) components. If a student feels threatened or offended by a statement made by another student during on-line portion of a class, please address the issue immediately with the other student(s) to clarify their position and your reaction. If this does not work, contact your class instructor so actions can be taken if necessary.

- During on-line discussion, follow the same rules concerning protection of confidential information as you would follow in face-to-face discussion.

13. **Nondiscrimination Clause**

The Adler Graduate School is an equal opportunity educator and employer. The Adler Graduate School does not discriminate on the basis of race, creed, color, national origin, sex, age, sexual orientation, veteran status, or physical disability in the employment of faculty or staff, the admission or treatment of students, or in the operation of its educational programs and activities. The institution is committed to providing equal education and employment opportunities in accordance with all applicable State and federal laws.

14. **Learning Accommodations (including students with disabilities)**

If a student in this course has a documented learning disability, he or she should tell the instructor during the first week of class. The instructor needs to know on the front end so that he or she can work with the student. The Adler Graduate School is committed to helping all students be successful, as best as can be reasonably accommodated. Documenting a learning disability occurs at the student's expense. When documented appropriately, the Adler Graduate School makes all reasonable accommodations.

15. **Instructor Contact Information**

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7. Class Schedule: Fall, 2009

Tuesday 11/17
Saturday 11/21
Tuesday 11/24
Tuesday 12/1
Saturday 12/5
Tuesday 12/8
Tuesday 12/15