Department of   **Educational Leadership & Counseling**   **College of**   **Education**

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                                                                    P.O. Box   519
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                                                                    Prairie View, TX 77446

Office Hours: Tue 4 – 5pm Thur. 5pm
You can always contact me by email.
Course Location: NW CAMPUS-RM
Course Abbreviation and Number: CNSL 5093
Catalog Description: Basic educational statistics course for master's degree candidates in counseling. Includes concepts and operations as applied to frequency distributions, graphing techniques, measurement of central tendency and variability, normal distribution curves, sampling theory and tests of significant differences between related and independent samples. Computer application packages and their utilization in classrooms and social agencies are also introduced.

Required Text: Spatz, Chris, B*asic Statistics: tales of distributions.* (**10**th ed).
                          Belmont, CA. Wadworth/Thompson Learning.
                          View Larger Image

   Chris Spatz
   ISBN 10: **0495808911 / 0-495-80891-1**
   ISBN 13: **9780495808916**

 **You will need a Calculator for this class.**

Access to Learning Resources: PVAMU Library:
                                                    phone: (936) 261-1500;
                                                    web: http://www.tamu.edu/pvamu/library/
                                            University Bookstore:
                                                    phone: (936) 261-1990;
                                                    web: https://www.bkstr.com/Home/10001-10734-1?demoKey=d

This course is in part based on the "E-FOLD-P" model of the College of Education. The acronym refers to the preparation of educators as facilitators of learning for diverse populations.
The major goals of this model are

1. To prepare professionals as problem solvers, critical thinkers, and decision makers who are able to communicate these skills to others.

2. To prepare professionals as facilitators of growth and development who exhibit a positive self-esteem and self-concept and are able to transmit these affective components to others.

3. To prepare professionals as reflective and continual learners who initiate and distribute knowledge and skills and utilize effective teaching practice.

4. To prepare professionals who understand and appreciate human diversity and demonstrate global awareness.
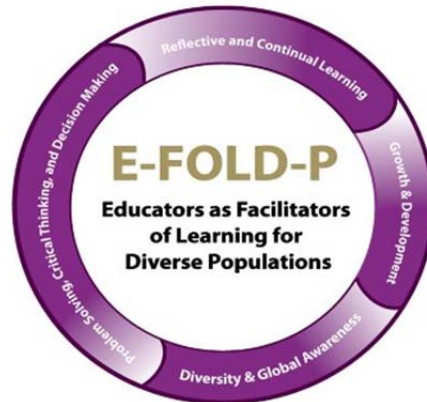
Course Goals or Overview:

The goals of this course are to
1. Explain, calculate and interpret descriptive statistics including: basic terminology, scales, notation, frequency distributions, measures of central tendency, measures of dispersion, and the normal distribution..
2. Read and analyze basic charts and graphs, contingency tables, and computer results
3. Explain, calculate, and interpret inferential statistics including probability and hypothesis tests.
4. Identify and apply the correct statistical technique to the research question.

Artifacts

Several assignments will be considered "artifacts" (items of coursework that serves as evidence that course objectives have been met) and will be loaded into either eCourse or the TrueOutcomes replacement program. The assignments to be used as artifacts will be identified later.

Course Objectives

At the end of this course, the student will be able to

1. Discriminate between: descriptive statistics and inferential statistics; populations and parameters, samples and statistics.
2. Use standard summation notation.
3. Construct and utilize grouped and ungrouped frequency distribution tables, histograms.
4. Identify distributions' shapes (skewness, modality).
5. Discriminate between random and nonrandom sampling procedures.
6. Summarize the differences among nominal, ordinal, interval, and ratio scales of measurement.
7. Discuss the relationship between scale of measurement and choice of inferential statistic.
8. Discriminate between discrete and continuous variables.
9. Given an example of psychological research, identify independent, dependent, and extraneous variables.
10. Compute mean, median, mode, range, interquartile range, and standard deviation.
11. Use SPSS in performing statistical computations.
12. Compute and utilize percentiles and percentile ranks.
13. Compare and contrast three different measures of central tendency and three measures of variability.
14. Compute and utilize z-scores and other standard scores.
15. Use the normal curve table to obtain areas under the curve given values of z and vice versa.
16. Describe how one would empirically construct the sampling distribution of a specified statistic (mean, median, mode, difference between means, etc.).
17. Explain the logic used in hypothesis testing, referring to null and alternative hypotheses, sampling distributions, critical values, rejection and nonrejection regions, alpha, exact significance level (p), and test statistics.
18. Define Type I and Type II errors, alpha, beta, and power. Succinctly define p, the exact significance level, and state the decision rule that compares p to alpha and decides whether or not to reject a null hypothesis.
19. Produce, utilize, and discriminate between directional and nondirectional hypotheses, and one- and two-tailed probabilities.
20. Describe the sampling distribution used to test hypotheses about means when the population variance is unknown. Referring to the distribution of sample variances, explain why the sampling distribution used to test hypotheses about means when population variance is unknown is different from a normal curve and how it is different from a normal curve.
21. Give a simple example explaining the concept of degrees of freedom.
22. Explain how to construct a 95% confidence interval for some parameter. Explain what "95% confidence" means.
23. Define and give (or recognize) examples of independent samples designs vs. correlated samples designs (within subjects or repeated measures and matched pairs or randomized blocks). Be able to choose and compute the inferential statistic appropriate for a particular design.
24. List and explain the assumptions of the independent t-test.
25. Construct and interpret bivariate scatter plots.
26. Explain the utility of the coefficient of determination.
27. Describe the assumptions involved in testing null hypotheses about bivariate regression coefficients.
28. Describe the possible effects of **a)** range restriction and **b)** extraneous variance upon the value of r.
29. Discuss the relationships among the independent t-test, the product moment correlation coefficient, and the point-biserial correlation coefficient.
30. Discuss the relationships between the product moment correlation coefficient and the chi-square analysis of 2 X 2 contingency tables.
31. Compute Pearson and Spearman Rank-order correlation coefficients.
32. State null and alternative hypotheses used in analyses of variance.
33. Given sample variance, sample mean, and sample size for each of k groups, with sample size constant across groups, compute treatment and error mean squares for a one-way independent samples ANOVA.
34. Given a set of not more than 20 scores, integers ranging from 1 to 10, divided equally into 2 to 4 one-way groups with integer means, compute by hand an independent sample ANOVA on these scores, presenting the results in a standard source table.
35. Describe the assumptions of a one-way independent sample ANOVA, comment on the violations of one or more of these assumptions, and discuss methods of correcting for violation of assumptions.

36. Give examples of how chi-square can be used to: a) test null hypotheses about variance, b) do a goodness of fit test, and c) do contingency table analyses OR, given one of these research situations, prescribe the appropriate analysis.
37. Identify two inferential statistics that use one-tailed tests of non-directional hypotheses and explain why they do so.
38. Discuss the differences between parametric and nonparametric inferential procedures. Contrast the hypotheses they test and the assumptions they make.
39. Given a hypothetical research example with data, choose and conduct an appropriate statistical analysis. Interpret the results. Be able to compute any of the statistics mentioned in this document or in the textbook. Be able to interpret and critique published research reports using these statistics.

Course Evaluation Methods

This course will utilize the following instruments to determine student grades: **Exams** – tests (multiple choice and problems) designed to measure knowledge of presented course material. No makeup examinations will be allowed except under documented emergencies (See Student Handbook).

1/15 - Introduction	**Week 1**
1/22 – Frequency Distributions	**Week 2**
1/29- Central tendency	**Week 3**
2/5-Test -1 (three chapters)	**Week 4**
2/12 – Variability	**Week 5**
2/19- Other Descriptive Statistics	**Week 6**
2/26 – Correlation	**Week 7**
3/5- Test- 2 (three chapters)	
3/12- Spring Break	**Week 8**
3/19 -Normal Distribution	**Week 9**
3/26 -Sampling Distribution	**Week 10**
4/2 – Sampling Distribution	**Week 11**
4/9- Test -3 (two chapters)	**Week 12**
4/16 - Hypotheses Testing, One-Sample Design	**Week 13**
4/23- Hypotheses Testing, One-Sample Design	**Week 14**
4/30 Hypotheses Testing, Two-Sample Design (Homework due)	**Week 15!!!!**
5/7 Final	

Final grade determination is based on the following averages:

A = 95-100;
B = 85-94;
C = 75-84
D = 65-74
 F = < 65

Extra Credit 5 points - The 21st annual Waymon T. Webster conference will be held from 8am-12pm on Saturday, March 2, 2013 on campus (certificate of attendance submission to instructor is required). The cost of the conference is $35.00 ($45.00 onsite). If due to any number of other obligations the student is unable to attend the conference a research paper which will require a minimum of 5 pages (not including cover sheet or references, written based on APA format) will be accepted in lieu of conference attendance. The research paper shall be written to document who the conference speaker is, his experience, and other relevant information such as publication's, etc. The research paper is due no later than 03/12/2013 via eCourse. The link to register for the conference online before the deadline of 2/25/2013 is listed below:

Departmental Web Page

ELAC (http://pvamu.edu/pages/174.asp)

SUPPORT MATERIALS

Getting Started with SPSS for Windows   by John Samuel

http://core.ecu.edu/psyc/wuenschk/SPSS.htm

Introduction and Univariate Descriptive Statistics

http://stat.tamu.edu/stat30x/notes/node4.html

Descriptive Statistics

http://onlinestatbook.com/

Electronic Reference Formats Recommended by the American Psychological Association

http://www.apastyle.org/elecref.html

Some important dates to remember

Deadline Dates (Check registrar's calendar to confirm dates)

Academic Calendar – Spring 2013

January 9, Wednesday

New Student Orientation

January 10 - 11, Thursday – Friday

Regular Registration for Returning Students

January 12, Saturday

Regular Registration for Graduate Students **(UG students if advised and issued alternate pin)**

January 14, Monday

Instruction **Begins**

Late Registration and Drop/Add **Begins**

January 18, Friday

Late Registration, Add Courses, Change Major/Certification or any Matriculation Change **Ends** for Undergraduate Students – **Student Web Registration Access Closed**

January 19, Saturday

Late Registration, Add Courses, Change Major/Certification or any Matriculation Change **Ends** for Graduate Students – **Student Web Registration Access Closed**

January 21, Monday

Dr. Martin Luther King Jr. Day (**University Closed**)

January 24, Thursday

General Student Assembly-**All Students Attend**

January 30, Wednesday

12th Class Day (Census Date)

Last Day to Withdraw from Course(s) **without Academic Record**

Late Deadline to apply for Spring 2013 graduation

January 31, Thursday

Withdrawal from courses **with Academic record** ("W") **Begins**

_____
February 11, Monday

20th Class Day

_____
March 7 – 9, Thursday – Saturday

Mid-Semester Examination Period

March 11 - 16, Monday – Saturday

Spring Break

March 12, Tuesday

Mid-Semester Grades Due

March 15, Friday

Spring Break (University Closed)

March 18, Monday

Instruction Resumes
The Academic Calendar for Prairie View A&M University is subject to change. Revised 08/08/12
March 27, Wednesday

Founders Day/Honors Convocation

March 29 - 30, Friday - Saturday

Good Friday/Easter **(Student Holiday)**

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April 1, Monday

Withdrawal from Course(s) **with Academic record** ("W") **Ends**

April 9, Tuesday

Priority Registration **Begins** for Summer/Fall 2013

April 12, Friday

Graduation Application Deadline for SUMMER 2013 AND FALL 2013

April 29-30, Monday-Tuesday

Course Review Day [Classes **must** convene and instructors will prepare students for Final Exams]

April 30, Tuesday

Last Class Day for Spring Semester

Last Day to Withdraw from the University (From All Courses) for the Spring 2013 Semester

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May 1 - 7, Wednesday-Tuesday
Final Examination Period

May 7, Tuesday

Final Grades due for Graduating Candidates

May 11, Saturday

Commencement

May 14, Tuesday

Final Grades Due for All Other Students

University Rules and Procedures

Prairie View A&M University does not discriminate on the basis of race, color, national origin, sex, disability, or age in its programs and activities. The following person(s) has been designated to handle inquiries regarding the non-discrimination policies:

Name: *Renee R. Williams*
Title: *Equal Opportunity Compliance Officer/Title IX Coordinator*
Institution: *Prairie View A&M University*
                  Office of Student Affairs & Institutional Relations
Address: *P.O. Box 519: MS 1107*
                  A.I. Thomas Building, St 013
                  Prairie View, Texas 77446

Telephone*:*   *936-261-2123*
Fax*:*   *936-261-2138*
Email: rrwilliams@pvamu.edu

Individuals requesting a disability accommodation should contact:

Name: Dr. Kay Norman
Title: Administrator for Diagnostic Testing and Disability Services
Institution: Prairie View A&M University

Email: kfnorman@pvamu.edu

House Bill 2504

Please Note: House Bill 2504 allows students the choice not to purchase the class textbook(s). Student's have the choice of using alternative methods to access textbook information (internet websites, books on reserve at the library, etc). Students **are** required and held accountability to complete all assignments as noted in the syllabus.

<u>**Two "C" Rule**</u>

Please Note: Continual matriculation at PVAMU requires that no more than two C's shall be earned in a graduate degree program. Any grade earned below a C means automatic dismissal from the graduate program.

NOTE: No grade of "C" or below will be accepted toward certification.

Academic misconduct (See Student Handbook):
You are expected to practice academic honesty in every aspect of this course and all other courses. Make sure you are familiar with your Student Handbook, especially the section on academic misconduct. Students who engage in academic misconduct are subject to university disciplinary procedures.

Forms of academic dishonesty:
1. Cheating: deception in which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not mastered; giving or receiving aid unauthorized by the instructor on assignments or examinations.

2. Academic misconduct: tampering with grades or taking part in obtaining or distributing any part of a scheduled test.

3. Fabrication: use of invented information or falsified research.

4. Plagiarism: unacknowledged quotation and/or paraphrase of someone else's words, ideas, or data as one's own in work submitted for credit. Failure to identify information or essays from the Internet and submitting them as one's own work also constitutes plagiarism.

Nonacademic misconduct (See Student Handbook)
The university respects the rights of instructors to teach and students to learn. Maintenance of these rights requires campus conditions that do not impede their exercise. Campus behavior that interferes with either (1) the instructor's ability to conduct the class, (2) the inability of other students to profit from the instructional program, or (3) campus behavior that interferes with the rights of others will not be tolerated. An individual engaging in such disruptive behavior may be subject to disciplinary action. Such incidents will be adjudicated by the Dean of Students under nonacademic procedures.

Sexual misconduct (See Student Handbook):
Sexual harassment of students and employers at Prairie View A&M University is unacceptable and will not be tolerated. Any member of the university community violating this policy will be subject to disciplinary action.
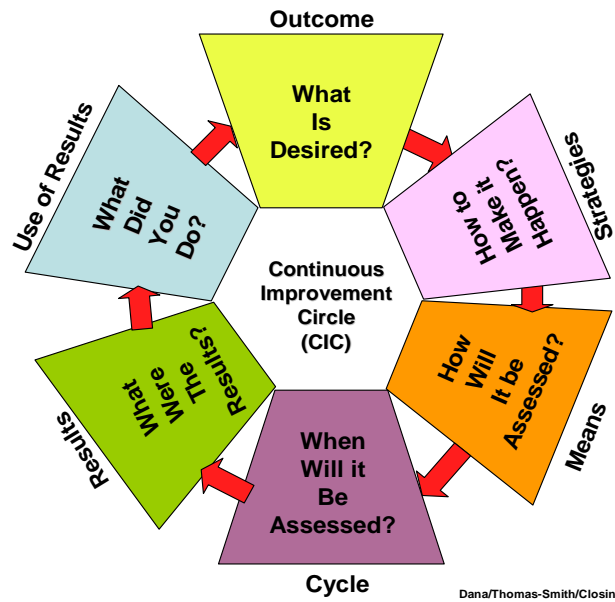
Attendance Policy:
Prairie View A&M University requires regular class attendance. Excessive absences will result in lowered grades. Excessive absenteeism, whether excused or unexcused, may result in a student's course grade being reduced or in assignment of a grade of "F". Absences are accumulated beginning with the first day of class.

Student Academic Appeals Process
Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor's assessment of their academic performance, the student has a right to appeal by the procedure listed in the Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.

Quality Without Compromise
Closing the Loop
The Six Question Model at Prairie View A&M University

Outcome

What Is Desired?

Use of Results

What Did You Do?

How to Make it Happen?

Strategies

Continuous Improvement Circle (CIC)

How Will It be Assessed?

Means

What Were The Results?

Results

When Will it Be Assessed?

Cycle

Dana/Thomas-Smith/Closing the Loop Six Question Model/landscape