<div align="center">**Syllabus**</div>

Course: Psychology 280 (schedule #22501-22506/Sections 1-6); Statistical Methods in Psychology
Course Description: Quantitative methods in psychology for producing, analyzing, and interpreting data. Sampling, basic research designs, describing distributions, correlation, regression, applications of normal probability curve, confidence intervals, and tests of significance. Analysis and interpretation of data using statistical, spreadsheet, and word processing software. Students with credit or concurrent registration in the following lower division statistics courses will be awarded a total of four units for the two (or more) courses: Psychology 280; Administration, Rehabilitation and Postsecondary Education 201; Biology 215; Civil Engineering 160; Economics 201; Political Science 201; Sociology 201; Statistics 119 and 250.
Prerequisites: Psychology 101; satisfaction of the Entry-Level Mathematics requirement. Proof of completion of prerequisites required: Copy of ELM score or verification of exemption.
Credit: 4 units
Quarter: Spring, 2011
Time: Monday and Wednesday, 2:00-3:15 pm
Location: PG-242
Instructor: Dale N. Glaser, Ph.D.
Phone: 619-220-0602
E-Mail: glaserconsult@sbcglobal.net

Lecture Meets in PG-242		Labs Meets in GMCS-428	
Section 1	M W 2:00 - 3:15 pm	Section 1	M W 9-9:50 am
Section 2	" "	Section 2	M W 9-9:50 am
Section 3	" "	Section 3	T TH 8-8:50 am
Section 4	" "	Section 4	T TH 8-8:50 am
Section 5	" "	Section 5	T TH 9-9:50 am
Section 6	" "	Section 6	T TH 9-9:50 am

You must be registered for <u>one PSY 280 section and its linked Lab</u> section to take this class. We will force drop anyone who is not enrolled in both courses or who does not attend all labs the first week of class. Morgan Da Costa, Lacey Wilson, and Brett Bogyo

Teaching Assistants --clarify....		
Morgan Da Costa	**Brett Bogyo**	**Lacey Wilson**
morganrdacosta@gmail.com	bbogyo1@gmail.com	laceymwilson@gmail.com.
GMCS 426A	GMCS 426A	GMCS 426A
Tues: 10 am-12 pm	Wed:10 am -12 pm	Tues: 2-4 pm

Background

A cursory read of a daily newspaper or weekly news magazine will find some type of reporting of data and statistics. For instance, in the July 2010 front page of the SD Union, it is reported that "in recent weeks, researchers have reported that Americans in midlife are a remarkably contented lot, but that they also have the highest rate of suicide……..the most anxiety ridden years are the 20s and early 30s" (casting some doubt on the myth of the "midlife crisis"!!). In an article titled *Study Links Obesity to Friends*……"UCSD and Harvard researchers point a finger at an unlikely culprit [for obesity]: the subtle--perhaps even subsconscious--influence of spouses, family members, and, most important, close friends" (SD Union, 7/26/07). Or in an article dated 7/22/08 it is claimed that "More women

leaving job pool…women in their prime earning years are struggling with an unfriendly economy and retreating from the work force, either permanently or in long stretches".

From an article titled "Statistics Paint Picture of U.S. Life" (12/20/09 in SD Union) the following statistics are enumerated:

1. More adults play video games than take educational courses
2. Americans drink more bottled water than alcohol
3. One in 10 male students said he carried a weapon to school within the previous month
4. An estimated 110 billion text messages were sent on cell phones in Dec 08, more than double the 48 billion in the previous December.
5. The number of pieces of mail delivered by the Postal Service, which being declining in 2007, dipped in 2008 to the lowest in a decade.
6. Women pulled even with men among new recipients of doctoral degrees in 2007 for the first time
7. About three in 10 people who married in the early 1900s did not stay married long enough to celebrate their 10th anniversary

And in the 8/17/09 issue of Time magazine in the lead article titled "*Why Exercise Won't Make You Thin*", the following statistics are reported:

➢ More than 45 million Americans belong to a health club (23 million in 1993)
➢ We spend some $19 billion a year on gym memberships
➢ In a 1980 survey 47% said they engage in regular exercises and in a 2000 re-administration of the same survey, 57% said they do so…………though it is noted obesity has risen markedly in that time period (1/3 Americans are obese)

Thus, valuable information can be gleaned from the daily statistics we obtain from the many surveys and research projects conducted; information that can be parlayed into policy and action. However, it is just as important to be a critical consumer of the data, and not fall into the trap of believing every article, blog, or reporter that starts off their commentary with: "research suggests.......". In fact, a 7/27/05 article in the SD Union has the ominous title: "*Science Unbecoming*.....misconduct allegations suggest rise in faked data, phony patients and other dubious inventions". A side article reports that "a new set of federal rules is now in effect, placing the onus for identifying, investigating and reporting allegations of scientific misconduct on universities and institutions" (pg. F2). And one of the premier medical journals (i.e., *New England Journal of Medicine*) has made it a requirement that all authors who submit articles divulge their funding source. It is inarguable that data plays a integral part in our lives (whether we know it or not!!); therefore, developing skills for interpretation of data is critical.

Course Objectives

Even though the first statistics course can (and possibly may be!) a daunting experience, especially when one's self-confidence in mathematics comes up wanting, many students find that with willful diligence and fortitude, this subject matter is surprisingly intelligible, and even fun (at times!). This introductory course will provide a snapshot into a wide array of commonly-used statistical methodologies: equal emphasis will be placed on understanding both the (1) conceptual and (2) mathematical properties inherent in each of the techniques. Especially of importance is how these are applied in the real world, and examples will be frequently provided in class. The primary goals and objectives are as follows:

➢ Choose and conduct appropriate statistical tests (by hand and on the computer).
➢ Interpret statistical results properly. What do they really *mean*?
➢ Write up analyses in APA style.
➢ Apply statistical thinking to everyday life (e.g., health and politics).

Helpful Hints/Platitudes

First of all you will find that the mathematics required for this course is not overwhelming; in fact, basic arithmetic (i.e., adding, subtracting, deriving square roots, etc.) is the rule here. However, it is essential that you keep up with the

logic of the derivations as well as the concepts behind them, which will be discussed in-depth in the classroom. Hence, leading to my second point. Given the cumulative nature of this class, it has been my experience that those who are somewhat 'random' (which you will find out later in the course is not synonymous with "haphazard"!!!) in their attendance, will encounter some difficulties if they attempt to learn the material solely through reading/relying on the text. It is the combination of the lecture and examples drawn in class that serve in amplifying and reinforcing the material in the text.

Again, I want to reiterate that the mathematics itself is not unduly complicated. Rather it is the logic that starts to become a bit complex, especially when we get to hypothesis testing. And it has been my experience that those who tend not to attend, and /or anticipate relying on their own resources to learn the material will not achieve an optimal performance in this class.

General etiquette!!: For the consideration of others please turn off and/or do not use any electronic devices (i.e., texting, surfing the web, sending emails, etc.) during class instruction; if you have the compelling reason (i.e., emergency) to do so please excuse yourself from the class. Thank you!

- *Students with disabilities:* ADA/Accommodations: San Diego State University seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Student Disability Services (SDS), 619.594.6473 or online at http://www.sa.sdsu.edu/sds. SDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the SDS.
- *Academic dishonesty:* The Student Code of Conduct is online at http://www.sa.sdsu.edu/srr/conduct1.html. The academic dishonesty code specifies actions for behaviors such as cheating on tests, plagiarism, and/or inappropriately collaborating with others. I will enforce the code in the course; cheating or other violations will result in appropriate penalties, including a failing grade on the assignment or in the course, and the reporting of that incident to the Office of Student Rights and Responsibilities. Students have the right to appeal such action in accord with the due process.

Course Requirements

1) Given the comprehensive (and cumulative) nature of the curriculum, **attendance** is strongly encouraged and should be adhered to per school policy.

2) **In class exams (3).** Mixture of multiple choice, true/false, and calculation. Material from text, handouts, and lecture. Examinations will be closed book but formulas and statistical tables will be provided during the test. And do not forget your calculator, but nothing preprogrammed!!. Each exam will be worth 80 points. Please bring Scantron 882-E (Green) to each test. **Note: cell phones will not be allowed in lieu of calculators, so please don't forget to bring your calculator for the tests. You will not be permitted to exchange/share calculators during the exam.**

3) **Lab Homeworks.** The TA's will be assigning a nd grading homework corresponding to the lecture (adjusted to 80 pts).

Other Coursework Notes

Makeup assignments: Makeup assignments are given in very rare circumstances. If you know you will miss an assignment due to official university business or a religious holiday, please contact me as far in advance as possible (at least 2 weeks) to make arrangements. If you are sick or if there is a family emergency, I will require documentation in order to allow you to make up work.

Safety

To be prepared for emergencies, each student is responsible for becoming familiar with the evacuation plan specific to each classroom. The evacuation plan is posted within each classroom and should be examined on the first day of class.

<u>Grading</u>

75% will be accorded for the three exams (80 pts/25% for each exam; 240 total points) and 25% (adjusted to 80 pts) for the Lab Homeworks. Total possible points = 320. Grading will be commensurate with school policy. In the event of an emergency situation, make-up of tests will be granted but *only* when notification is provided **prior** to test administration. ***Extra credit will not be provided in this course!***

<u>Course Materials</u>
Textbook:
- Gravetter, F.J, & Wallnau, L.B. (2009). *Statistics for the Behavioral Sciences* (8th Edition).
- Also bundled with the text is the software: **Aplia". Cengage Learning [www.aplia.com]** which offers online problems and a self-scoring capability. TA's will furnish the Course Key. Here are the options provided by CENGAGE:

1. **Package**- all inclusive, print text with Aplia access code. Available at Aztec Shops and KB Books.

2. **Less expensive <u>Rental option direct with Aplia</u>**:

    • Student enters Aplia <u>Course Key</u> at <u>CengageBrain.com</u>, Purchases Aplia, then

    • Student emails their Course Key to <u>support@aplia.com</u>, Obtains <u>rental coupon</u> for textbook, then

    • Student purchases text rental at CengageBrain.com, and applies <u>rental coupon</u>.

3. **Least expensive <u>Aplia digital</u>** – Student enters Aplia <u>Course Key</u> at CengageBrain.com, Purchases Aplia. Text rental option available to these students, see #2.

Course Website on Blackboard:
- Look for <u>PSY270-CX-Spring2011: Combined sections</u>, not individual section links
- Class lectures will not be available on the web. Handouts (e.g., statistical tables and in-class problems/examples (from *t*-test on)) and lab assignments will be posted.

Calculator: You will need a scientific calculator. A basic version with a square and square root function is sufficient. Cost will not be prohibitive (e.g., at Staples can purchase TI-30XA (Texas instruments) for < $12.00).

Day	Date	Lecture Topic*	Skip in Book
		RESEARCH METHODS & DESCRIPTIVE STATISTICS	
W	1/19	Ch 1. Introduction to Statistics	Real limits (throughout book)
M	1/24	Ch. 1 (con't); Ch 2. Frequency Distributions	Stem-and-leaf plots
W	1/26	Ch 3. Central Tendency	Median for continuous variables
M	1/31	Ch. 3 (con't); Ch 4. Variability	"Computational" formulas (throughout book)
W	2/2	" "	
		LOGIC BEHIND INFERENTIAL STATISTICS	
M	2/7	Ch 5. Z-scores: Location of Scores and Standardized Distributions	(Read all)
W	2/9	Ch. 5 (con't); Ch 6. Probability	(Read all)
M	2/14	Ch 7. Probability and Samples: The Distribution of Sample Means	(Read all)
		INFERENTIAL STATISTICS FOR TO TEST ONE OR TWO MEANS	
W	2/16	Ch. 7 (con't); Exam Review	
M	**2/21**	**Exam I (Chapters 1-7) Bring Scantron # 882-E (green)**	
		INFERENTIAL STATISTICS FOR TO TEST ONE OR TWO MEANS	
W	2/23	Ch 8. Introduction to Hypothesis Testing	Directional 1-tail hypotheses (throughout book--Will discuss briefly in class)
M	2/28	Ch. 8 (con't); Ch 9. Introduction to the t-Statistic.	1-tail tests
W	3/2	" "	
M	3/7	Ch. 9 (con't) and Ch 10. The t-Test for Two Independent Samples.	(Read all)
W	3/9	Ch 10. The t-Test for Two Independent Samples (cont').	(Read all)
M	3/14	" "	
W	3/16	Ch 11. The t-Test for Related Samples.	(Read all)
M	3/21	Ch 12. Estimation.	(Read all)
W	3/23	Ch 12. Estimation (con't).	(Read all)
	3/28-4/1	**Spring Break--No Class!!**	
M	4/4	**Exam 2 (chapters 8-12) Bring Scantron # 882-E (green)**	
		INFERENTIAL STATISTICS FOR DIFFERENCE BETWEEN SEVERAL MEANS	
W	4/6	Ch 13. Introduction to Analysis of Variance (ANOVA)	Ignore formulas using T or G, skip Scheffe/Tukey post hoc tests
M	4/11	" "	
W	4/13	" "	
M	4/18	Ch 15. Two-Factor Analysis of Variance	Read for content, skip specific

			formulas/notation.
W	4/20	Ch 15. Two-Factor Analysis of Variance (con't)	
M	4/25	" "	
INFERENTIAL TESTS FOR PREDICTION				
W thru M	4/27 thru 5/9	Integration of: Ch 16. Correlation (con't) Ch 17. Introduction to Regression Exam Review	Ch 16: r as Z section Ch 17: standard error of estimate; multiple regression and anything after
W	5/18	**Final Exam (chapters 13, 15-17) Bring Scantron # 882-E (green) (1300-1500 or 1:00 to 3 p.m.)**	

* Though ordering of topics will be as listed above, contingent on progress there may be some overlap of topics across subsequent dates.