PSY 315: Behavioral Sciences Statistics

INSTRUCTOR: **Joe Allen** **Spring 2007**
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PHONE/FAX: **735-4879 / 739-4614 (coversheet required)**
OFFICE: **Behavioral Sciences 109**

OFFICE HOURS: **By Appt.**

COURSE PREREQUISITES: **None.**

COURSE/CATALOG DESCRIPTION:
Introduction to the methods and rules for organizing and interpreting observations; descriptive and inferential statistics, including frequency distributions, hypothesis testing, simple analysis of variance, estimation, and Chi-Square. This course develops and assesses the skills and competencies for the program student learning outcome of the Scientific Method and its Application in the Field of Psychology.

The purpose of this course is to provide students with the fundamental building blocks necessary to conduct and analyze statistical research. Social science research, or the study of people and things around us, consists of many different parts—statistics is just one of these parts, albeit a very important one.

Ever-increasingly, functioning in today's society requires individuals to be proficient in interpreting and conducting statistical research; this course will enable students to become more skilled in these areas which by today's standards are not considered to be so technical anymore. Specific material to be covered throughout the course include: the analysis, presentation and interpretation of descriptive statistics including, measures of central tendency and variability, probability, sampling; and the analysis, presentation and interpretation of inferential statistics including items such as, t-tests, analysis of variance, significance, correlation, and regression analysis.

This course is the first of a two-part sequence in behavioral sciences research required of all majors in Psychology. The sequence intends to introduce the student to behavioral & social sciences research methods (i.e., research design and statistical analysis of data). In PSY 315, students will be introduced to the basics of data measurement, descriptive and inferential statistical techniques used to analyze research data, and proper interpretation and write-up of results.

The analysis of statistics is dictated by being able to manage and process data through the use of computers. Much of our understanding of the current world through statistics is just a button-click away, whereas a few decades ago, these same types of functions would have taken days and even weeks to perform. Thus, in order to better understand statistical methods, these concepts will be introduced in conjunction with statistical software. The "Statistical Package for the Social Sciences" (SPSS) software will be used for analyzing & interpreting quantitative data.

Students will create their own survey instrument in order to provide a hands-on experience in survey methods; the collected data will also serve as a backdrop for statistical analysis assignments using the SPSS program.

STUDENT LEARNING OUTCOMES:

Upon successful completion of this course, the student will have a demonstrable understanding of:

1. The difference between populations and samples, and what is associated with each in terms of research issues and statistical techniques.
2. Variables types and levels of measurement.
3. The various types of descriptive statistics used in social science research, and how to produce these types of statistics in order to summarize and analyze data.
4. The various statistics and techniques used to assess relationships between variables.
5. The use and proper application and interpretation of inferential statistics in conjunction with hypothesis-testing.
6. The proper presentation and interpretation of data in graph and table form.
7. The application of SPSS in terms of proper data entry, coding of variables, performing statistical functions, and producing output for analysis.
8. The methods of writing-up research results in a logical manner and in a suitable format for the social sciences.

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MARIANIST EDUCATIONAL VALUES

The five characteristics of a Marianist Education are:

1. **Educate for Formation in Faith**
   Catholic Universities affirm an intricate relationship between reason and faith. As important as discursive and logical formulations and critical thinking are, they are not able to capture all that can be and ought to be learned. Intellectual rigor coupled with respectful humility provide a more profound preparation for both career and life. Intellectual rigor characterizes the pursuit of all that can be learned. Respectful humility reminds people of faith that they need to learn from those who are of other faiths and cultures, as well as from those who may have no religious faith at all.

2. **Provide an Excellent Education**
   In the Marianist approach to education, "excellence" includes the whole person, not just the technician or rhetorician. Marianist universities educate whole persons, developing their physical, psychological, intellectual, moral, spiritual and social qualities. Faculty and students attend to fundamental moral attitudes, develop their personal talents and acquire skills that will help them learn all their lives. The Marianist approach to education links theory and practice, liberal and professional education. Our age has been deeply shaped by science and technology. Most recently, information and educational technologies have changed the way faculty and students research and teach. At Marianist Universities, two goals are pursued simultaneously: an appropriate use of information technology for learning, and the enhancement of interaction between students and teachers. As Catholic, Marianist Universities seek to embrace diverse peoples and understand diverse cultures, convinced that ultimately, when such people come together, one of the highest purposes of education is realized: a human community that respects every individual within it.

3. **Educate in Family Spirit**
   Known for their strong sense of community, Marianists have traditionally spoken of this sense as "family spirit." Marianist educational experience fosters the development of a community characterized by a sense of family spirit that accepts each person with loving respect, and draws everyone in the university into the challenge of community building. Family spirit also enables Marianist universities to challenge their students, faculty and staff to excellence and maturity, because the acceptance and love of a community gives its members the courage to risk failure and the joy of sharing success.

4. **Educate for Service, Justice, and Peace**
   The Marianist approach to higher education is deeply committed to the common good. The intellectual life itself is undertaken as a form of service in the interest of justice and peace, and the university curriculum is designed to connect the classroom with the wider world. In addition, Marianist universities extend a special concern for the poor and marginalized and promote the dignity, rights and responsibilities of all people.

5. **Educate for Adaptation to Change**
   In the midst of rapid social and technological change, Marianist universities readily adapt and change their methods and structures so that the wisdom of their educational philosophy and spirituality may be transmitted

even more fully. “New times call for new methods,” Father Chaminade often repeated. The Marianist university faces the future confidently, on the one hand knowing that it draws on a rich educational philosophy, and on the other fully aware for that philosophy to remain vibrant in changing times, adaptations need to be made.

Selected from *Characteristics of Marianist Universities: A Resource Paper*, Published in 1999 by Chaminade University of Honolulu, St. Mary’s University and University of Dayton

Each of these characteristics is integrated, to varying degrees, in this course.

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READING MATERIALS:

Gravetter & Wallnau. Essentials of Statistics for the Behavioral Sciences, 5th ed. Wadsworth. 2005.

Kirkpatrick & Feeney. A Simple Guide to SPSS for Windows: For Versions 12.0 & 13.0. With the Student Version of SPSS 12.0 CD. Wadsworth. 2005.

Additional required reading material will be assigned throughout the term.

COURSE APPROACH:

This course will be presented using a variety of methods, primarily through lecture, group discussions and exercises, and group/individual presentations. The course will employ instructional aids like PowerPoint and other audio/visual material.

COURSE REQUIREMENTS:

- **Six (6) written assignments.** These assignments will range between 1-3 pages. The assignments will generally focus on interpretation and analysis of data performed using SPSS. Assignments are due every two weeks and will correspond with materials covered in class the week before. The assignment will be handed out during the week in which the materials are covered. Assignments, unless noted otherwise, must include the SPSS printout associated with the analysis and interpretation. Write-up of results must be typed and formatted.
- **Six (6) quizzes.** These quizzes are non-cumulative and will be administered every 2-3 weeks and will usually cover 2-3 chapters of material at a time.
- **Three (3) exams.** These exams are non-cumulative and will only include materials covered in the specified sections. The exam contents will correspond highly with materials covered and tested in the quizzes.
- **Regular class attendance.** As a policy, if a student misses **4** classes throughout the term, a deficiency notice will be sent to the registrar’s office. Each absence up-and-beyond 4 will result in 10 points being deducted from a student’s attendance/participation grade (i.e., a student can get negative points if he/she misses several classes). For those with extenuating circumstances, an incomplete may be granted (to be made up no later than 30 days after the final exam). “Extenuating circumstances” will be determined on a case-by-case basis, but the standard for this sort of exception is considered as circumstances beyond one’s control (e.g., medical illness, family emergency). In such cases, you will be asked to provide appropriate documentation to support your absence(s). Besides simply coming to class, students will be asked to contribute to lecture, group discussions and exercises, informal presentations, and to complete in-class and out-of-class.

TERMS OF COURSE REQUIREMENTS:

1. *Late assignments/projects will be discounted 10% per day after the due date. All late assignments must be turned in within **1** week, otherwise loss of **all** credit will occur.*
2. Unless otherwise specified, *assignments are due at the beginning of class.*
3. *Exams are to be taken on the days that they are administered.* Exceptions are to be granted only in extenuating circumstance, otherwise loss of all credit will occur. If you are given the opportunity to take an exam after given in class, you will be given a different exam which may be more comprehensive than the initial one given.
4. *Regular attendance is a must given the amount of material covered in the course.* Four absences or more, not including medical emergencies, etc., will incur overall point deductions (the more absences up and beyond four, will affect your grade increasingly). If you know you will be missing a class in the future due to legitimate reasons, be sure to tell me in advance and provide any necessary paperwork; this will allow me to keep you up-to-date on material you will be missing.
5. *Students will be expected to have read materials prior to each class session and completed appropriate assignments.* It is especially important that students read and do work outside of the classroom due to the breadth of materials covered in such a relatively short period of time. *In-class quizzes may be administered periodically in order to assess progress and attention given to weekly readings/exercises.*
6. *I have an open-door approach when it comes to helping students understand the material and do well in the course. If you would like to meet with me, visit me during my office hours or call/e-mail me to set up an appointment for an alternative time if those hours don't work for you. DON'T HESITATE to talk to, call, or e-mail me!*
7. Any instances of academic dishonesty will result in an "FD" (failure for dishonesty) grade for the course and will be subject to the policies and procedures for the college. If you are at all unclear about what constitutes academic dishonesty, refer to catalogued materials.
8. *As a policy, opportunities for extra credit WILL NOT be available. All students begin the course with perfect scores, and will have every opportunity to maintain this score.*
9. Chaminade will provide assistance for any student with documented disabilities. Any student who believes he/she may need accommodations in this class must contact **Dr. Don Kopf, 735-4845 or Dr. June Yasuhara, 739-4603**, at the Counseling Center (office next to Security) in order to determine if the student meets the requirements for documented disability in accordance with the Americans with Disabilities Act. It is important to contact them as soon as possible so that accommodations are implemented in a timely fashion.
10. The instructor reserves the right to change the schedule of the syllabus when deemed necessary.

GRADING SYSTEM:

The class will be graded on a curve, based on the highest score received on exams, participation, and attendance. For this curve, a standardized grading system will be used:

A = 93-100% (of highest point total received)
B = 84-92%
C = 75-83%
D = 66-74%
F = 65% and below

Activity	% of Final Grade	Point Distribution
Six Quizzes	30%	6 x 25 = 150
Six Writing Assignments	30%	6 x 25 = 150
Two Midterm Exams	20%	2 x 50 = 100
One Final Exam	10%	50
Classroom Participation/Attendance	10%	50
Total	**100%**	**500**

As a policy, the curve for this class will not exceed a straight 90-80-70-60 curve. For example, if a student scores 100% on an exam, the curve will revert downward to a standard 90-80 . . . etc. curve. It will not be 93%/84%, etc. Based on overall class performance, the instructor will adjust the curve accordingly if anomalies occur.

About the Instructor:

Joe Allen is a full-time faculty member in the C&CJ Department, advisor to CJ students, and the program's internship coordinator. His usual repertoire of courses includes criminology, juvenile delinquency, behavioral sciences statistics, and criminal justice system. He began teaching at Chaminade in 1994 as adjunct faculty, and has also taught courses at the University of Hawaii and Hawaii Pacific University. Before joining the Department in a full-time capacity, he worked with the Corrections Population Management Commission, Department of the Attorney General, and the Social Science Research Institute (University of Hawaii). Throughout the years, he has been involved in various research and evaluation projects, including the topics of: probation and parole recidivism, sentencing simulation modeling and policy analysis, juvenile delinquency and youth gangs, community crime prevention, restorative justice, domestic violence and anger management, substance abuse treatment, ecstasy, prostitution, runaway and missing children, uniform crime reporting, victimization surveys, and crime trends and law enforcement/correctional policy analysis. Mr. Allen is currently a Ph.D. candidate in the Sociology Department at the University of Hawaii with an emphasis in Criminology, and is expected to complete his doctoral degree in Fall 2006. Before transferring to the University of Hawaii, he attended the University of Minnesota.

COURSE SCHEDULE **PSY 315**

Week	General Topic	Read for Week
1	• Course Introduction	G & W: Ch. 1 K & F: Ch. 1
2	• **Assignment #1 Due** • Frequency Distribution	G & W: Ch. 2 K & F: Ch. 2
3	• Frequency Distributions (cont'd.)	G & W: Ch. 2-3 K & F: Ch. 3 & 5
4	• **Quiz #1; Chapters 1-2** • Measures of Central Tendency	G & W: Ch.3-4 K & F: Ch. 6
5	• Measures of Central Tendency (cont'd.) • Variability • **Quiz #2; Chapters 3-4**	G & W: Ch. 4 K & F: Ch. 6
6	• z-Scores & Standardized Distributions • **Exam #1; Chapters 1-4**	G & W: Ch. 5 K & F: tba
7	• **Assignment #2 Due** • Probability & Samples • **Quiz #3; Chapters 5-6**	G & W: Ch. 6-7 K & F: tba
8	• Constructing & Testing Hypotheses • t Statistic	G & W: Ch. 8-9 K & F: tba
9	• **Assignment #3 Due** • t Test for Two Independent Samples • **Quiz #4; Chapters 7-9**	G & W: Ch. 10 K & F: tba
10	• **Exam #2; Chapters 5-9** • t Test for Two Related Samples • **Assignment #4 Due**	G & W: Ch. 11 K & F: tba
11	• Estimation • **Quiz #5; Chapters 10-11**	G & W: Ch. 12 K & F: tba
12	• ANOVA • **Assignment #5 Due**	G & W: Ch. 13 K & F: tba
13	• **Quiz #6; Chapters 12-13** • Two-Factor ANOVA	G & W: Ch. 14 K & F: tba
14	• Correlation & Regression	G & W: Ch. 15 K & F: tba
15	• Chi-Square • **Assignment #6 Due**	G & W: Ch. 16 K & F: tba
FINAL EXAMINATION: TBA (Chap. 1-16; all materials covered during term)		