



Campus:

Bridgeway Boulevard
Sausalito, California 94965 USA

Postal Mailing Address:

PO Box 564
Mill Valley, California 94942 USA

Website: www.EnergyMedicineUniversity.org

Phone: 415-331-1011

Fax: 415-331-9293

Instructor Contact Information:

William Bengston, PhD
New York USA
Home Phone: (631) 331-5764
Office Phone: (631) 447-3310
E-mail: wbengston@sjcny.edu
BengstonW@aol.com

EMP 878: APPLIED STATISTICS (3 credits)

Overview of Course:

An examination of statistical principles and techniques in the analysis of social science data. Application of computer software packages for statistical analysis will be emphasized.

Learning Objectives:

- 1) conceptual/theoretical understanding of the uses of statistics in addressing social science problems;
- 2) to enable the student to select appropriate statistical procedures which address specific data analysis problems;
- 3) to enable the student to analyze statistical data on computer software packages.

Audience:

Open to all students in the Distance Masters or Doctoral program.

COURSE OUTLINE

Preliminary Considerations:

Statistics/Computer Phobia

How to Study for the Course ---> 1) read text before & after class

Importance of Class Attendance 2) ****don't fall behind****

3) expect 6 hours/week study

4) ask questions!!

I. Introduction - Statistics as a research tool; Descriptive and Inferential statistics;

Variables and Levels of measurement;

Introduction to STATA

Salkind, chap. 1; *pp. 106-109 (measurement scales)*

STATA commands: describe, log, label, print

(see appropriate chapters in STATA manual)

Descriptive Statistics

II. Frequency Distributions - grouped and ungrouped data

STATA commands: tabulate, plot, recode, generate

Salkind, chap. 4

III. Graphs - histograms and frequency polygons; types of distribution curves.

Salkind, chap. 4

STATA commands: graph, hist, box

IV. Measures of Central Tendency - mean, median, mode; variance; standard deviation; skew; kurtosis; standard scores

Salkind, chap. 2,3,4,8, Appendix B.1

STATA commands: summarize, detail, genstd, sktest

V. Correlation

Salkind, chap. 5

STATA commands: correlate, scatter

VI. Regression - simple linear regression; multiple regression (unstandardized and standardized)

Salkind, chap. 16

STATA commands: regress, beta

Inferential Statistics

VII. Populations, Samples, Probabilities, Confidence Intervals

Salkind, chap. 7

VIII. Hypothesis Testing - null hypothesis; levels of significance

Salkind, chap. 7,9

IX. T-tests - independent and dependent samples

Salkind, chap. 11,12, appendix B.2

STATA command: ttest

X. Inferences about Correlation and Regression

Salkind, chap. 15, appendix B.3, B.4

STATA commands: pwcorr, sig, star

XI. Analysis of Variance (ANOVA) - F distribution; test of multiple comparisons

Salkind, chap. 13, appendix B.3

STATA commands: oneway, scheffe

XII. Chi Square - test for goodness of fit; test of independence of two variables; test for equality of proportions

Salkind, chap. 17, appendix B.5

STATA commands: chi2, column, row, chiprob

XIII Selecting Appropriate Statistical Tests

Everything!

Student Competencies

1) given a selection of research data problems, students will be able to: a) decide on the most appropriate statistical procedure to address the problem; b) analyze the data, including hypothesis and significance testing, utilizing statistical software packages;

2) students will have exposure to univariate, bivariate, and multivariate analyses of data, including: measures of central tendency; cross tabulation; chi-square; t-tests; correlation; simple and multiple regression; analysis of variance.

FACULTY-STUDENT COMMUNICATION

- **Telephone Contact:** Students should arrange all telephone communications with the instructor by email beforehand. An initial phone contact to clarify course objectives and develop a schedule should be made prior to beginning the course. This contact should be scheduled within the first few weeks of commencement of the semester. After this, periodic telephone communication can be arranged with instructor. All telephone calls will be at student's expense.
- **Email Contact:** Reflection on and questions about the coursework papers and field placement internship should be addressed via email monthly or as needed. Students are always encouraged to contact the instructor via email whenever a problem arises.
- **Communications:** It is requested that students stay in weekly or every other week correspondence with the instructor using email. The student should also set up periodic telephone conversations, at their expense, to discuss problems, concerns, or determine the direction of their course work. Students are always encouraged to contact the instructor by email, fax, or telephone whenever a major concern may arise. It should be understood that as mature students, it is the responsibility of the students to stay in contact with their instructors. The instructor may be able to set up one-on-one discussions with the student using Skype. Students should check email frequently for professor and EMU messages.
- **NOTE:** All lessons, coursework and papers must be copied from both the student and professor to lessons@energymedicineuniversity.org

Students will normally send communications via email and submit papers as MSWORD format files attached to email messages. Synchronous Internet sessions may be used for “chat sessions” using Yahoo Messenger Chat or Skype. Check with your instructor on the type of communications he uses.

Internet Forums: Please contact our Registrar to be included in the EMU Internet forums.

Length of Course:

Length of this Energy Medicine course is five (5) months or one (1) semester.

COURSE DELIVERY STYLE

Distance Education - Coursework is completed at a location determined by the student utilizing a computer that has the ability to play audio and video clips, with Microsoft Office Word, Excel, PowerPoint, Adobe Reader, along with a current web browser, internet connection and email address. Contact and communication with distance students is typically conducted by telephone, Internet, Skype, text chat, and email. Students are also encouraged to contact the University by facsimiles, and postal mail, and by personal visit to the University.

GUIDE SHEET

Textbooks:

Salkind, Neil. 2014. *Statistics for People Who (Think They) Hate Statistics*. 5th edition. Sage.

Small Stata. The Stata Corporation

See the STATA web site at: www.stata.com for a comprehensive exposure to the statistical program. There are many helpful links available.

Exams and Grading:

There will be three exams given during the course of the semester, and a cumulative final exam. The two highest grades of the three exams will constitute 60% of the final grade (the lowest grade will be dropped). The final will constitute 30% of the final grade. The final exam is mandatory and comprehensive.

The remaining 10% of the final grade will be a short paper, writing up an interpretation of a dataset that will be provided to you during the semester. This paper will be the equivalent of a "Results" section of a journal article. Details will be given in class communications. The paper is due two weeks before end of semester.

Two highest exams	- 60%
(Mandatory) Final	- 30%
Written paper	- <u>10%</u>
	100%

Assignments:

As a complement to my distance classroom instruction, you will regularly be assigned statistical and computer problems. You may be asked to hand these to me for discussion, but will not count towards your final grade.