JOMC 704.001 – Statistical Methods for Mass Communication Research
Course Syllabus
Fall 2014

Professor: Francesca Dillman Carpentier
Office: Room 326
Phone: 919-259-0092
E-mail: francesca@unc.edu
Office Hours: M-Th 10:30a-11:30a

Class Hours: 3:30p-4:45p TR
Classroom: 58 Carroll Hall

Suggested texts (there are no required textbooks):

Stockburger, D. Introductory Statistics: Concepts, Models, and Applications. (has SPSS examples, available free at http://www.psychstat.missouristate.edu/introbook/sbk00.htm)

StatSoft Electronic Textbook (available free at http://www.statsoft.com/textbook/)

HyperStat Online (simpler, available free at http://davidmlane.com/hyperstat/)

Hayes, A. F. (2005). Statistical methods for communication science. Mahwah, NJ: Erlbaum.

Kranzler, J.H. (2007). Statistics for the terrified, 4th edition. Upper Saddle River, NJ: Pearson Education, Inc.

Weber, R., & Fuller, R. (2013). Statistical Methods for Communication Researchers and Professionals. First Edition. Dubuque, IA: Kendall Hunt.

Learn free stats program R for free at Code School, http://www.codeschool.com/courses

Course philosophy:
In this course, I hope to help you understand when and why to use a particular statistical test to address a given research question, as well as understand research that uses quantitative methods. We will cover when a parametric versus nonparametric test should be used, when it is more appropriate to use a test of group differences as opposed to a correlation-based analysis, what mediator and moderator variables are, and tests and limitations of assessing reliability of measurements. The course will be rooted in practice and interpretation of real data sets (using SPSS) and will involve some by-hand calculations involving basic algebra (higher-order math, e.g., calculus, not needed). By the end, you should be equipped to contribute to knowledge appropriate to the communications professions in which you work.

Attendance Policy:
        Each student gets two free absences. Each absence after the two results in a half-grade deduction (e.g., a B becomes a B- at three absences).

Late Tests/Assignments:
        There will be no make-ups for tests and tests turned in after the day/time they are due will receive an automatic 10% (whole letter grade) deduction for every day it is late. Assignments are expected to be turned in at the beginning of class the day they are due. Whereas there is no grade or points assigned to homework, completion of homework is necessary to practice the skills learned in class.

Grading:
        Students are graded according to the highest professional standards. As with most other graduate courses in this school, grades are H (high pass), P (pass), L (low pass) and F (fail). Below are the equivalencies for each grade:
        F (fail) = 69% or less (a "D" or below)
        L (low pass) = 70-79% (a "C" grade)
        P (pass) = 80-89% (a "B" grade)
        H (high pass) = 90-100% (an "A" grade)

Honor Code:
        It is expected that each student in this class will conduct him/herself within the guidelines of the Honor System. All academic work should be done with the high level of honesty and integrity that this University demands.

Class Requirements-

Exams:
        There are two take-home exams with no make-up opportunities:
- Test 1 worth 35% of the total grade, covering Lessons 1 through 4,
- Test 2 worth 45% of the total grade, covering Lessons 1 through 7.

Exams are predominantly data analysis/presentation, short-answer and multiple choice. Exams cover lecture material and homework.

Assignments:
        Assignments are not graded, but they are good for you to do. This is the primary way to receive constant feedback on the skills covered in the lessons. As there are in-class computer assignments, you will need to either use classroom computers or use a laptop with SPSS access (e.g., your own SPSS program copy or a wireless Internet connection to get to SPSS from Virtual Lab, https://virtuallab.unc.edu/).

Tentative Course Schedule (subject to change)

Chapter readings listed correspond with lecture material for that day. Readings are meant as supplements to the lectures--examples of use of the analyses covered in class.

Aug 19	Lesson 1	Variables and Distributions *Types of data (e.g., nominal, ordinal, interval, ratio)* *Parametric versus nonparametric data* *Frequency distributions, bar charts, pie charts;* *Histograms, stem plots;* *Mean, median, standard deviation, variance, range, inter-quartile range, box plots* *Central Limit Theorem*
Aug 21	Lesson 1	Variables and Distributions *continued* Assigned: HW1a-Variables and Distributions
Aug 26	Lesson 1	Variables and Distributions *continued* *z-scores, standardizing* Assigned: HW1b-Standardizing (HW1a due beginning of class)
Aug 28	Lesson 2	Group Differences: The *t*-test *The t-test calculation* *Hypothesis testing, inference* *Types of error* *Margin of error, confidence intervals, confidence levels* (HW1b due beginning of class)
Sept 2	Lesson 2	Group Differences: The *t*-test *continued* Reading example: Cooper & Tang Reading example: Haynes, Shoemaker, & Lacy
Sept 4	Lesson 2	Group Differences: The *t*-test *continued* Assigned: HW2- *t*-test
Sept 9	Lesson 3	Group Differences - One-way ANOVA *One-way ANOVAs* *Calculation of F-statistic* *appropriate kinds of variables* (HW2 due beginning of class)
Sept 11	Lesson 3	Group Differences - One-way ANOVA *continued* Assigned: HW3a-ANOVA calculation
Sept 16	Lesson 3	Group Differences - One-way ANOVA *continued* *Post-hoc tests* Assigned HW3b-ANOVA calculation and post-hoc (HW3a due beginning of class)

Reading example: Etling & Young

Sept 18	Lesson 4	Factorial ANOVAs I

Mediator versus moderator variables
Interpreting interactions, post-hoc tests, plots, presentation

Sept 23	Lesson 4	Factorial ANOVAs I *continued*

Assigned: HW4a-Factorial ANNOVA concept

Sept 25	Lesson 4	Factorial ANOVAs I *continued*

Assigned: HW4b-Factorial ANOVA and post-hoc
(HW4a due beginning of class)
Reading example: Munyofu et al.
Reading example: Punyanunt-Carter et al.

Sept 30	Review	Review, questions, catch-up

Assigned: Take-Home Test 1
(HW4b due beginning of class)

Take-Home Test 1 (covers Lessons 1 through 4) - Due Tuesday Oct 7 by midnight

Oct 2	Lesson 5	Association

Scatter plots
Pearson Correlation Coefficient
Reliability
Effect Sizes

Oct 7	Lesson 5	Association *continued*

(Take Home Test 1 due today by midnight)

Oct 9	Lesson 5	Association *continued*

Assigned: HW5-Association

Oct 14	Revisiting Test 1	Reviewing test questions

Asking questions about previously covered material

Fall Break begins Oct 15 at 5:00pm

Oct 21	Lesson 6	Simple Linear Regression

Line estimation
Types of hypotheses, appropriate variables
(HW5 due beginning of class)

Oct 23	Lesson 6	Simple Linear Regression *continued*

Oct 28	Lesson 6	Simple Linear Regression *continued*

Assigned: HW6-Simple Regression

Oct 30	Lesson 7	Multiple Regression

Multiple linear regression
Goodness of fit statistics
Multicollinearity
(HW6 due beginning of class)
Reading example: Brubaker

Nov 4	Lesson 7	Multiple Regression *continued*

Different types of linear regressions
Hierarchical linear regression
Assigned: HW7a-Multiple Regression, Collinearity

Nov 6	Lesson 7	Multiple Regression *continued*

Mediation, briefly
Assigned: HW7b-Hierarchical Linear Regression
(HW7a due beginning of class)
Reading example: Nichols et al.
Reading example: Grabe & Drew

Nov 11	Lesson 8	Factor Analysis Crash Course

Testing validity with factor analyses
Orthogonal versus oblimin rotations
Different types of extractions

Nov 13	Lesson 8	Factor Analysis Crash Course *continued*

Nov 18	Lesson 8	Factor Analysis Crash Course *continued*

Assigned: HW8-Factor Analysis

Nov 20	Lesson 9	Nonparametric tests

Chi-square tests, Mann-Whitney U tests, Spearman R
Reading example: Maynard & Taylor

Nov 25	Lesson 9	Nonparametric tests *continued*

Assigned: HW9- Chi-Square
(HW8 due beginning of class)

Nov 27	---	**Thanksgiving - no class today**

Dec 2	Review	Questions about Lessons 1 through 7

Assigned: Take-Home Test 2
(HW9 due beginning of class)

Take-Home Test 2 (covers Lessons 1 through 7) - Due Tuesday Dec 9 by midnight