Syllabus for PH 539 (section 002)
Public Health Biostatistical Methods II
(Spring 2017)

Instructor : Dr. Fares Qeadan

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Web Page:	http://www.mathalpha.com/teaching.html
Class Meeting Times:	T 9:30 am - 10:45 am, Bandelier Hall East 105 (Main Campus)
	R 9:30 am - 10:45 am, Bandelier Hall East 105 (Main Campus)
Office Hours:	F 09:00 am - 12:00 pm or by an appointment

TA : Yuridia Leyva (Office Hours: TBA)

Email: YLeyva@salud.unm.edu

Prerequisites : PH-538 (Biostatistics Methods I) or its equivalent.

Text :

- Statistical Modeling for Biomedical Researchers. A Simple Introduction to the Analysis of Complex Data, 2nd Edition (2009). By William D. Dupont.

- Regression Methods in Biostatistics, 2nd Edition (2012). By Eric Vittinghoff, David Glidden, Stephen Shiboski, and Charles McCulloch.

Course Objectives : The main objective of this course is to (a) Introduce intermediate biostatistical techniques and apply critical thinking to analyze public health data, (b) Access, evaluate and communicate statistical information, (c) Apply ethical guidelines for statistical practice and (d) Identify sampling and research methods for public health. Further, students in this course will gain experience in numerous statistical methods often used in health research, including software implementation. By the end of this course, students will be able to:

- Understand the fundamental concepts statistical modeling and prediction.

- Implement and interpret regression (linear and logistic), ANOVA and Survival analyses.

- Make inference about populations from samples using regression, ANOVA and survival analyses.

- Determine appropriate statistical methods to use in a given situation.

- Use STATA (or any other statistical software) to conduct intermediate statistical analyses.

Course Description : This course will cover statistical methods used in the medical sciences including:

- Linear Regression.

- Analysis of Variance (ANOVA).

- Logistic Regression.

- Survival Analysis.

- Sample Size Calculation [if time permits].

Software : In this course we will be using STATA 14 but the use of any other statistical software, except EXCEL, is acceptable. In class, support will be provided for STATA only. Stata/IC is available for $75 (six-month license) or $125 (annual license) at: `http://www.stata.com/order/new/edu/gradplans/student-pricing/`.

Quizzes : There will be no quizzes in this course.

Mid-Term Exam (25%) : There will be one mid-term exam. The exam consists of a power point presentation about the final project contents and progress. The tentative schedule of the exam is Tuesday and Thursday, March 28 and 30. This presentation will be a progress report on your final research project so it should be presented by all members of your team. Each team should share their presentation with me before the presentation date for feedback and suggestions.

Homework (30%) : Homework will be assigned every 2-3 weeks and collected in class on the scheduled date as listed below in the course schedule. Late homework will not be accepted (unless it is the result of an officially excused absence). Homework assignments will mostly consist of written questions. We will have 4 homeworks through the semester. There is no negative points for wrong answers. Note that all assignments must be typed. Grades for late homeworks will be reduced by 25% for each day that the homework is late with the understanding that the late homework policy is valid only for up to two days.

Take Home Project (30%) : You will be expected to finish this course by writing and academic paper (almost ready for publication), which demonstrates a comprehensive knowledge of some aspect of statistical modeling, in a take home project. You may work in groups with the caveat that a group of 2 or 3, should produce the work of 2 or 3. The upper limit on a group is 4 people but individual projects are preferred. In this task, you will identify the importance of

working collaboratively with diverse researchers (your peers) and interact sensitively, effectively, and professionally with persons from diverse demographic, cultural, socioeconomic, educational, and professional backgrounds and lifestyles. The Take Home Project is due on Thursday May 11, 2017 by 5 pm. You can decide on the data source for your final project. Students should have their final decision regarding the data they plan to use by Feb. 7th 2017.

Final Exam (10%) : There will be a final exam. The exam consists of a poster presentation about the final project. The tentative schedule of the final exam is Thursday, May 11. Faculties and investigators from the departments of Family and Community Medicine and Internal Medicine will be invited to join the posters session. I and other judges/reviewers will recognize the best presentation from the poster session. Funds for printing the posters will be available for justified requests.

Attendance & Participation (5%) : You are expected to attend all classes. If you have three or more unexcused absences you may be dropped from the course (which may result in a W for the course). Please note that it is your responsibility to drop the course if you decide to stop attending classes. If you don't you will receive an F.

Grades : Your grade will be based on the following scale:

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A+ = [97 - 102]
A  = [93 - 97)
A- = [90 - 93)
B+ = [87 - 90)
B  = [83 - 87)
B- = [80 - 83)
C+ = [77 - 80)
C  = [73 - 77)
C- = [70 - 73)
D+ = [67 - 70)
D  = [63 - 67)
D- = [60 - 63)
F  = [00 - 60)
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UNM Policy on Academic Dishonesty : Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found guilty of academic dishonesty or otherwise fails to meet the standards. Any student judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course. Academic dishonesty includes, but is not limited to, dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records.

Students with Special Needs : Students with newly or previously diagnosed disabilities who need accommodations for learning and/or testing will compile, submit, and maintain their documentation through the Accessibility Resources Center on Main Campus. Students who think that they may need such accommodations should first contact Dr. Cheri Koinis, PhD, who advises students and coordinates these services for the Health Sciences Center. She will guide students through the process of acquiring services and suggesting relevant accommodation formats. Please contact her directly at 505-272-3839 or at ckoinis@salud.unm.edu. Additional information for School of Medicine students is also available in the School of Medicine Counseling and Psychotherapy Guide at http://fcm.unm.edu/education/physician-assistant-program/docs/Psychotherapy_Guide_2014.pdf.

All students should inform their professors as soon as possible so they can help implement the accommodations. More information about the disability policy for all students is available from the UNM Accessibility Resource Center at http://arc.unm.edu/requirements.html.

Important Dates :

- Jan 27, Friday Last day to ADD sections and CHANGE credit hours on LoboWEB

- Feb 3, Friday Last day to DROP without "W" grade and 100% tuition refund on LoboWeb.

- March 12-19, Spring Break

- April 14, Friday Last day to DROP without Dean's Permission on LoboWEB.

- May 5, Friday Last Day for CHANGE grade mode with form.

- May 13, Saturday Last day of instruction

- May 8-13, Final Exams

Policies : The instructor reserves the right to make any changes he considers academically advisable. Changes will be announced in class. It is your responsibility to keep up with any changed policies and therefore:

- You are responsible for the material covered in class including any changes in the course schedule and syllabus.

- Make up exams will only be given when you have a verifiable excuse. Please note, make up exams will not be the same as the original exam and may be considered more challenging.

- Students are expected to behave in a courteous and respectful manner towards the instructor and their fellow students; this helps create a positive and supportive learning atmosphere in the classroom. Please be on time for your lectures; turn off your cell phone; and refrain from activity that could be disruptive to the class.

Course Schedule: : Tentative Course Outline

Date	Topic	Reading
T 01/17	Review of PH-538	Ch. 1
R 01/19	Simple Linear Regression	Ch. 2
T 01/24	Simple Linear Regression (continued)	Ch. 2
R 01/26	Multiple Linear Regression	Ch. 3
T 01/31	Multiple Linear Regression (continued)	Ch. 3
R 02/02	Multiple Linear Regression (continued)	Ch. 3
T 02/07	Multiple Linear Regression (continued)	Ch. 3
R 02/09	Multiple Linear Regression (continued)	Ch. 3
T 02/14	Multiple Linear Regression (continued) **HW1 DUE**	Ch. 3
R 02/16	Multiple Linear Regression (continued)	Ch. 3
T 02/21	ANOVA	Ch. 10
R 02/23	ANOVA (continued)	Ch. 10
T 02/28	ANOVA (continued)	Ch. 11
R 03/02	ANOVA (continued)	Ch. 11
T 03/07	Simple Logistic Regression **HW2 DUE**	Ch. 4
R 03/09	Simple Logistic Regression (continued)	Ch. 4
T 03/14	SPRING BREAK	NO CLASS
R 03/16	SPRING BREAK	NO CLASS
T 03/21	Multiple Logistic Regression	Ch. 5
R 03/23	Multiple Logistic Regression (continued)	Ch. 5
T 03/28	EXAM: PRESENTATIONS	
R 03/30	EXAM: PRESENTATIONS (continued)	
T 04/04	Survival Analysis **HW3 DUE**	Ch. 6
R 04/06	Survival Analysis (continued)	Ch. 6
T 04/11	Survival Analysis (continued)	Ch. 7
R 04/13	Survival Analysis (continued) **HW4 DUE**	Ch. 7
T 04/18	Survival Analysis (continued)	Ch. 7
R 04/20	TBA	
T 04/25	TBA	
R 04/27	TBA	
T 05/02	TBA	
R 05/04	TBA	
T 05/09	Finals Week	NO CLASS
R 05/11	**Final Project and Posters session Due**	