



**Mel and Enid Zuckerman College of Public Health
University of Arizona**

**SYLLABUS
Statistical Consulting
Epidemiology/Public Health 685
FALL 2008**

Time: Wednesday 1:00 pm – 3:50 pm

Location: A123/A125 Drachman Hall

Instructor: Denise J. Roe, Dr.P.H.
Professor, Epidemiology & Biostatistics
Mel and Enid Zuckerman College of Public Health
Room A240 Drachman Hall
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Office Hours: Monday 3:00 – 4:30 or by appointment

Teaching Assistant: None

Course Description: An advanced course in the application of biostatistical methods to analyze and interpret epidemiology, public health and medical studies. The goal is to assist students in becoming independent statistical consultants, able to effectively and accurately convey information in verbal and written presentations.

Course Prerequisites:

Biostatistics: Public Health 576A (Introduction to Biostatistics)
Public Health 576B (Biostatistics for Research)
Epidemiology: Epidemiology 573A (Basic Principles in Epidemiology)
Computing: Ability to use a statistical computing package (Stata, SAS, SPSS)

Preferred: Public Health 576C (Applied Biostatistic Analysis)
Public Health 576D (Data Management & the SAS Programming Language)

Course Learning Objectives:

1. To gain practical experience in statistical consulting, including identifying the appropriate scientific question, determining the appropriate method(s) of analysis, and developing effective oral and written presentations of statistical results.
2. To develop practical skills useful in statistical consultation, including basic data management, and data transfer between statistical packages.
3. To identify and practice communication styles to enhance the flow of information from a statistician to an investigator.

Course Notes:

A webpage has been created for this class using the Desire 2 Learn (D2L) interface. This course website contains the syllabus and lecture material. The website will also act as a means of communication between students and the instructor when programming and analysis issues arise between classes.

To access the 685 website, login at: <http://d2l.arizona.edu>

- Click the 'UA NetID' Login.
- Enter your NetID and password, as you would to access your UA email account.

Under 'My Academic Courses', click on: EPID_CPH 685 FA08 Statistical Consulting

- News: This section contains any class announcements
- Content: Access the syllabus and class lectures in this section.
- Discussion: Contains two forums to get help from the instructor and other students between classes.
 - Analysis Questions: General questions about your analysis and results
 - STATA Nightmares: STATA code that isn't working
You are encouraged to check this area regularly and help each other out as you can. I'll check it on a daily basis and provide help when needed.
- Dropbox: This is where you can submit your analysis plan, draft report, and final report

For further information on how to use the D2L interface, go to:
<http://help.d2l.arizona.edu/students.htm> and select 'Getting Started'

Recommended Texts/Readings:

Fundamentals of Biostatistics Sixth Edition, Bernard Rosner, Duxbury Press, Belmont, CA, 2006

Statistical Consulting, Javier Cabrera and Andrew McDougall, Springer-Verlag, New York, 2002

Statistical Consulting: A Guide to Effective Communication, Janice Derr, Duxbury Press, Belmont, CA, 2000.

Course Requirements:

Each student is expected to serve as a “statistical consultant” using actual design questions and real data. Initially each student will be provided with a design question that the instructor or one of the other MEZCOPH statisticians received from an investigator. Students will be expected to discuss their proposed design orally, then to write a statistical design description that could be included in a grant application.

Subsequently each student will “analyze” an individual data set. This data can be from their thesis/dissertation or from a dataset provided by the instructor. The goal for this analysis is to develop an analysis plan, perform appropriate analyses, and describe the results in oral/written presentations.

Before obtaining access to individual datasets, all students must complete the CITI Human Subjects Projection course (some of you may already have done this for your internship or work). Here is the link: <http://www.irb.arizona.edu/training>. You will just need to complete the Biomedical Course. It will take about 6 – 8 hours to complete. When you complete it, please send me a copy of the “CITI Completion Report” including the date.

Grading/Student Evaluation:

The final grades are based on the following point system (the instructor reserves the right to revise this scale, if necessary)

- A 90-100%
- B 80- 89%
- C 70- 79%
- D 60- 69%
- E < 60%

Points are allocated across the assignments as follows:

Design project:

20% (10% oral, 10% written)

Analysis project:

Analysis plan: 20% (10% oral, 10% written)

Draft report: 30% (15% oral, 15% written)

Final report: 30% (15% oral, 15% written)

Class Attendance/Participation:

All students are expected to attend class and participate in class discussions. Please advise me via email if you will miss a particular class. As the class meets only once a week, absences are discouraged except for illness and attendance at conferences. All holidays or special events observed by organized religions will be honored for those students who show affiliation with that particular religion. Absences pre-approved by the UA Dean of Students (or Dean’s designee will be honored.)

Course Schedule:

Date	Topic	Assignments Due
8/27	<i>Introduction and Case Study</i>	
9/3	Scientific Graphs and Tables – Elizabeth Jacobs, PhD Discussion of design projects and individual projects	CITI Human Subjects Certification
9/10	<i>Consulting from A to Z</i> Discussion of design projects and individual projects	
9/17	<i>Review of Basic Statistical Analyses – Summary Statistics, Graphical Displays, Two Sample Hypothesis Tests</i> Presentation of design projects	Design Report
9/24	<i>Review of Statistical Modeling – Linear and Logistic Regression, Survival Analysis</i> Discussion of individual projects	Individual Dataset Identified
10/1	<i>Verbal Communication</i> Oral presentations of individual analysis plans	
10/8	Guest Consultant: Paul Hsu, PhD Oral presentations of individual analysis plans	Analysis Plans
10/15	<i>Written Communication</i> Guest Consultant: Duane Sherrill, PhD	
10/22	How to Manage Multiple Projects – Sylvia Brown, MPH, ABD <i>How to Write the Statistical Section for a Grant Submission</i>	
10/29	Guest Consultant: Chengcheng Hu, PhD	
11/5	<i>How to Run a Meeting</i> Discussion of analyses	Draft Report
11/12	<i>How to Deal with Difficult People</i> Discussion of analyses	
11/19	<i>Sources of Statistical Information</i> Discussion of analyses	
11/26	Presentations of Final Reports and Meeting with Investigator	
12/3	Presentations of Final Reports and Meeting with Investigator	
12/10	Presentations of Final Reports and Meeting with Investigator	Final Report

Required Statements:

Communications: You are responsible for reading emails sent to your UA account from your professor and the announcements that are placed on the course web site. Information about readings, news events, your grades, assignments and other course related topics will be communicated to you with these electronic methods. The official policy can be found at: <http://www.registrar.arizona.edu/emailpolicy.htm>

Disability Accommodation: If you anticipate issues related to the format or requirements of this course, please meet with me. I would like us to discuss ways to ensure your full participation in the course. If you determine that formal, disability-related accommodations are necessary, it is very important that you be registered with Disability Resources (621-3268; drc.arizona.edu) and notify me of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations. The official policy can be found at: <http://catalog.arizona.edu/2008%2D09/policies/disability.htm>

Academic Integrity: All UA students are responsible for upholding the University of Arizona Code of Academic Integrity, available through the office of the Dean of Students and online: The official policy found at: <http://dos.web.arizona.edu/uapolicies/scc5308abcd.html> and <http://dos.web.arizona.edu/uapolicies/cai1.html>.

Classroom Behavior: Students are expected to be respectful of the instructor and other students at all times (including limited talking, no reading newspapers, email, texting, etc.). Cell phones may be brought to class but should be in the mute or vibrate position. If you must take an emergency call or page during class please leave class quietly to speak with the caller. Students are expected to be familiar with the UA Policy on Disruptive Behavior in an Instructional Setting found at <http://web.arizona.edu/~policy/disruptive.pdf> and the Policy on Threatening Behavior by Students found at <http://web.arizona.edu/~policy/threatening.pdf>

Grievance Policy: Should a student feel he or she has been treated unfairly, there are a number of resources available. With few exceptions, students should first attempt to resolve difficulties informally by bringing those concerns directly to the person responsible for the action, or with the student's graduate advisor, Assistant Dean for Student and Alumni Affairs, department head, or the immediate supervisor of the person responsible for the action. If the problem cannot be resolved informally, the student may file a formal grievance using the [Graduate College Grievance Policy](http://grad.arizona.edu/catalog/policies/academic-policies/grievance-policy) found at <http://grad.arizona.edu/catalog/policies/academic-policies/grievance-policy>

Grade Appeal Policy: <http://catalog.arizona.edu/2008%2D09/policies/gradappeal.htm>

Syllabus Changes: Information contained in the course syllabus, other than the grade and absence policies, may be subject to change with reasonable advance notice, as deemed appropriate.