Course Title: Computing II: Epi Information

Course Number: 57337

Course Location: Spring 2015: Newark, Medical Science Building (C Level), Computing Lab, Room C632

Course Date & Time: Wednesday: 8:30-9:30 PM

Course Instructor: Dennis Fried, PhD, MPH, MBA Instructor, Department of Quantitative Methods (Newark) friedda@sph.rutgers.edu

Office Hours: By Appointment Only

Course Assistant: Foram Jasani (Email: foram.shah1@gmail.com)

Required Course Text: Software Instruction Manual provided by instructor at no charge

Additional/Supplemental Readings/Resources:

- IMPORTANT - Please bring a 2 GB USB thumb drive to every class
- If using your own laptop, must be PC-based (NO MACs)
- Passwords: students must test their passwords at the lab prior to class. Due to time constraints, I will not be able to resolve any Rutgers account/password/technical issues during class. Computing lab rules will be discussed during the first class and will be strictly enforced. If you have any questions, call the Computing Lab at 973-972-6789

Course Description: Epi Info is a public domain software package freely distributed to public health practitioners and researchers worldwide. Epi Info can be downloaded from the internet to your laptop or desktop - - http://wwwn.cdc.gov/epiinfo/html/downloads.htm

Using Epi Info for Microsoft Windows®, students will develop and computerize questionnaires for bioterrorism investigation, analyze data from acute and chronic disease studies to produce epidemiologic statistics, maps, and graphs, and construct a menu for a permanent information system.

Fieldwork: Although not generally a substitute for SAS, Epi Info can complement most quantitative analyses. It is an excellent tool, not only for field outbreak surveillance, but also for basic quantitative analysis. Some students have found it helpful with fieldwork projects, and even with health-related employment tasks.

Selected Department Competencies Addressed: Each Department identifies competencies for each degree offered. The competencies addressed in this course for the MPH for the Department of Quantitative Methods include:

- Use epidemiologic concepts to identify and evaluate public health problems
- Critically evaluate epidemiological data and findings
- Communicate results from epidemiologic studies
Course Objectives: By the completion of this course, students will be able to:

- Demonstrate proficiency in the use of Epi Info software
- Develop and computerize a questionnaire for epidemiologic field investigations
- Enter and analyze data from both acute and chronic disease studies, producing epidemiologic statistics
- Develop graphs and maps to explore time and place (e.g., Epi Curves)
- Conduct univariate, bivariate and multivariate analyses
- Generate and interpret morbidity and mortality measures of association
- Generate and interpret linear and logistic regression, as well as Cox Proportional Hazards models
- Generate charts and graphs
- Understand basic field epidemiology
- Analyze case studies in applied epidemiology
- Review, Reinforce and Apply Introduction to Epidemiology course work

Course Requirements and Grading:

- Final course grade will be based on several performance measures: attendance & participation; homework assignments based on weekly lesson; final group presentations.

1. Attendance & Participation 25%
2. Homework 25%
3. Final Presentation/Exam 50%

Total: 100%
Course Schedule:

- **01/21/15 (Class #1)**
  - Introductions
  - Syllabus Review
  - Attendance Sheet *(please be sure to provide your name and email address)*
  - Download Instructions *(note of caution: some personal laptops/desktops encounter technical issues)*
  - Late Homework Policy: **No late homeworks accepted** without prior arrangement
  - My Dropbox
  - **Oswego Case Study**
  - **Load files** on student USB thumb drives
  - **Homework:** Unfortunately, you will not be able to work in the lab after class ends. Per lab rules, I have to close the lab at 9:30 PM. Please be sure to do your assignments prior to class or at other times.
  - **Lab Rules:** No Food and No Drinks!

- **01/28/15 - - - - NO CLASS - - - -

- **02/04/15 (Class #2) - - Don’t forget your USB thumb drive**
  - **Module A:** Creating a Questionnaire
  - **Skills:** Starting a New Questionnaire, Creating Fields, Using Legal Values, Grouping, Coloring and Moving Fields, Editing Fields, Opening and Closing a Questionnaire, Printing a Questionnaire
  - **Homework (due next class):** Module A Exercises

- **02/11/15 (Class #3) - - Don’t forget your USB thumb drive**
  - **Module B:** Check Code and Data Entry
  - **Skills:** Opening a Questionnaire, Using the Program Editor to Create Check Code, Data Entry, Basic Functions in the Enter Data page,
  - **Homework:** None

- **02/18/15 (Class #4) - - Don’t forget your USB thumb drive**
  - **Module C:** Reading/Importing External Data Files
  - **Skills:** Reading and Writing an Excel File, Creating a Line Listing, Frequency Table, Reading an Access File, Reading and Writing a Text File
  - **Homework (due next class):** Module C Exercises
• 02/25/15 (Class #5) - - Don’t forget your USB thumb drive
  Module D: Graphing
  Skills: Bar Charts, Scatter XY Graph, Graphing Multiple Variables on Multiple Graphs,
  Histogram, Epi Curve, Saving & Retrieving Output/Graphs, Pie Chart,
  Homework (due next class): Module D Exercises

• 03/04/15 (Class #6) - - Don’t forget your USB thumb drive
  Module E: Basic Statistical Analysis Part I Univariate
  Skills: Routing Output, Measures of Central Tendency, Grouping/Re-Coding Continuous
  Data, Using the “Set” Command to keep or drop Missing Values, Derived Variables
  Homework (due next class): Module E Exercises

• 03/11/15 (Class #7) - - Don’t forget your USB thumb drive
  Module F: Basic Statistical Analysis Part II Bivariate & Multivariate
  Skills: Cross-tabulations, Attack Rates, Stratification, Confounding and Effect
  Modification
  Homework (due next class): Module F Exercises

*************************** MARCH 18, 2015 NO CLASS SPRING BREAK **************************

• 03/25/15 (Class #8) - - Don’t forget your USB thumb drive
  Module G: Basic Statistical Analysis Part III Measures of Association
  Skills: Single Table Analysis, Attack Rate Ratio, Risk Difference, Relative Risk, Odds
  Ratio
  Homework (due next class): Module G Exercises

• 04/01/15 (Class #9) - - Don’t forget your USB thumb drive
  Module H: Advanced Statistical Analysis Part I Simple & Multiple Linear Regression
  Skills: Simple Linear Regression, Visual Examination of Data, Multiple Linear
  Regression, Adding an Interaction term to Linear Regression, Using the “Define” and
  “Assign” functions for Polynomial Regression
  Homework (due next class): Module H Exercises

• 04/08/15 (Class #10) - - Don’t forget your USB thumb drive
  Supplement 1: Subset Analysis
  Supplement 2: When Tables Go Awry
  Skills: Using the “Select” function to analyze and graph subsets of subjects
  Discuss Group Presentations/Final Exam (and form groups)
  Homework (due next class): Supplement 1 Exercises
School of Public Health Honor Code: The School of Public Health Honor Code is found in the student bulletin (sph.rutgers.edu/academics/catalog/index.html). Each student bears a fundamental responsibility for maintaining academic integrity and intellectual honesty in his or her graduate work. For example, all students are expected to observe the generally accepted principles of scholarly work, to submit their own rather than another’s work, to refrain from falsifying data, and to refrain from receiving and/or giving aid on examinations or other assigned work requiring independent effort. In submitting written material, the writer takes full responsibility for the work as a whole and implies that, except as properly noted by use of quotation marks, footnotes, etc., both the ideas and the works used are his or her own. In addition to maintaining personal academic integrity, each student is expected to contribute to the academic integrity of the school community by not facilitating inappropriate use of her/his own work by others and by reporting acts of academic dishonesty by others to an appropriate school authority. It should be clearly understood that plagiarism, cheating, or other forms of academic dishonesty will not be tolerated and can lead to sanctions up to and including separation from the Rutgers School of Public Health.

Policy Concerning Use of Recording Devices and Other Electronic Communications Systems: When personally owned communication/recording devices are used by students to record lectures and/or classroom lessons, such use must be authorized by the faculty member or instructor who must give either oral or written permission prior to the start of the semester and identify restrictions, if any, on the use of mobile communications or recording devices.