EPI 809: BIOSTATISTICS II

Spring 2020 (3 credits)

Class Meets: Mon/Wed 12:40pm-2:00pm

Room: 1210 Anthony Hall

Instructors:

Gustavo de los Campos	775 Woodlot Dr IQ – building #1311 (517)884-7607 gustavoc@msu.edu Office hours: ½ hr after class.
Joseph Gardiner	909 Wilson Road Room B601 (517) 353.8623 gardine3@msu.edu
Ana I. Vazquez	909 Wilson Rd, Room 627B. (517) 353-8623 avazquez@msu.edu Office hours: 2-4 pm.

Textbook: Rosner, B. *Fundamentals of Biostatistics, 8th Edition*, Duxbury.

(same textbook as the one used in EPI 808).

Prerequisites: EPI 808, EPI 851, or equivalent.

Course objectives: (i) statistical analysis of **quantitative variables**, including correlation, simple and multiple linear regression, analysis of variance and hypothesis testing in the linear model (t-test and F-test) and (ii) **categorical data analysis**, including hypothesis testing of proportions, analysis of contingency tables, and logistic regression.

Course description:

This course will be useful to those interested on learning how to implement and understand statistical analysis of quantitative and categorical data. The primary focus will be on regression models (both linear and logistic regression) and on the analysis of contingency tables.

The course is organized in two modules:

Module 1: Correlation and linear regression analysis of quantitative variables (Rosner Chapters 11 & 12), and

Module 2: Categorical data analysis, logistic regression (Rosner Chapters 10 & 13)

The first module will take the first half of the course and will be the focus of the midterm. The second module will be covered in the second half of the course and evaluated in the final exam. We will use standard statistical packages such as SAS and R which are available in all computer labs on campus. This will aid in carrying out data analyses far more efficiently, than doing tedious "hand calculations".

Syntax/scripts will be provided. The main focus of will be on implementing these analyses and on interpreting the results obtained from the software.

Evaluations and grading

There will be approximately 5 homework assignments, a midterm and a final exam. Additionally, there may be in-class assignments or quizzes, but these will not be graded. The final score will be a weighted average of the homework (30%) and the exams (35% midterm, 35% final).

Tentative scale for final grades (based a 100% final score)

Score	<45	45-<55	55-<65	65-<70	70-<75	75-<80	80-≤89	≥90
Grade	0	1	1.5	2	2.5	3	3.5	4

TENTATIVE SCHEDULE

First module

First class: Monday 1/6

No-class on MLK Day, Monday, 1/20

Midterm (tentative): Monday 2/17

Second module

Start: Wednesday 2/19

No class during Spring Break: Monday, 3/2 - Friday, 3/6

Last class: Wednesday 4/22

Final exam: Monday, 4/27, 12:45pm - 2:45pm

Academic Honesty: The Department of Epidemiology & Biostatistics adheres to the policies of academic honesty as specified in the General Student Regulations 1.0, Protection of Scholarships and Grades, and the All-University Policy on Integrity of scholarship and Grades which are included in *Spartan Life: Student Handbook and Resource Guide*. Students who plagiarize will receive a grade 0.0 on the homework, exam or quiz.

ADA: To arrange for accommodation a student should contact the Resource Center for People with Disabilities at http://www.rcpd.msu.edu/ or (517)353-9642 .