

**HS301 – Fundamentals of Biostatistics
Summer 2017**

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A. Course description

Fundamentals of Biostatistics (3 credits)

This is an introductory course in statistical methods used in applied research for the biological sciences. The course will emphasize the principles of statistical reasoning, underlying assumptions, hypothesis testing, and careful interpretation of results. Some topics covered: descriptive statistics, graphical displays of data, probability, confidence intervals and tests for means, differences of means, sample size and power, differences of proportions, chi-square tests for categorical variables, regression, multiple regression, and non-parametric statistics.

Prerequisite: Math 100, HS105

B. Format

Online course (online content with online computer lab assignments)

C. Textbook

Basic Biostatistics by B. Bert Gerstman (Jones and Bartlet Publishers, 2nd Edition, first edition will also work)

D. General goals and objectives

Students will develop a new set of reasoning skills that will provide a foundation for designing, analyzing and interpreting research in the biological sciences. This knowledge and skills are essential in today's healthcare environment which emphasizes evidenced-based healthcare and health outcome evaluation.

At the conclusion of this course students will be able to:

- Appreciate the vital role of biostatistics in healthcare research and in promoting evidenced-based healthcare and health outcome evaluation.
- Articulate the underlying concepts and assumptions for major study designs, hypothesis testing and common analytical methods.
- Demonstrate quantitative skills such as the ability to organize raw data, graphically explore the data distributions, conduct appropriate statistical analyses and interpret and apply results for problem solving.

E. Grading system

93 – 100	A	77 – 79	C+
90 – 92	A-	73 – 76	C
87 – 89	B+	70 – 72	C-
83 – 86	B	67 – 69	D+
80 – 82	B-	60 – 66	D

“A” reflects exceptional work (going beyond the basics, integrating material well, displaying professionalism in individual and group work, application and demonstration of knowledge and skills, showing initiative, using creativity, writing is reflective of multiple drafts).

“B” reflects good work (valuable teamwork skills, active in class, ability to grasp basic concepts and apply to new situations, some participation in class, completes all assignments with a degree of proficiency but may not demonstrate initiative, creativity or reflection consistently, writing contains errors or lacks conciseness and completeness).

“C” reflects average work (assignments are completed at the minimum, basic concepts are grasped but cannot be applied, some difficulty in group work, spelling and grammar mistakes are common, writing is conversational in tone with little attention paid to detail, word choices, organization (rough draft quality), little participation in class.

Student responsibilities for successful coursework:

Keeping up with online due dates for lesson quizzes, activity quizzes and exams is essential to do well in this course.

Reading Assignments: Reading the book chapters and doing some problems at the end of each book chapter is also important to do well in this course.

Late quizzes and activities may be accepted but these will receive a lower grade. *If you have any concern about meeting the requirements of this course, please see me.*

G. Derivation of course grade

Two exams (20% each - multiple choice and short answer)	40%
Lesson Quizzes	20%
Activities (D2L drop box)	10%
Final exam (comprehensive)	30%

H. Other class information

The quizzes, activities and exams are open book but all work must be done independently. Working with other students on quizzes or exams will be considered academic misconduct. ***Students should not share quiz or exam answers. Doing so will be considered severe academic misconduct with penalties including the expulsion from the University.***

No text messaging.

Email – please note that you are responsible for anything I send you via email.

Remember, class attendance is very important!

I. Communicating with your instructor via email

I check my email frequently during the day. However, I receive a lot of email and I sometimes delete emails which do not have the subject specified. If you have not received a response to your email within 24 hours, please resend your email. I do not check email routinely on some weekends.

J. Students with special needs

Students with special needs should contact the instructor as early in the semester as possible to make any necessary class/test accommodations.

The contents of this syllabus are as complete and accurate as possible. The instructor reserves the right to make any changes necessary to the syllabus and course material. The instructor will make every effort to inform the students of changes as they occur. It is the responsibility of the student to know what changes have been made in order to successfully complete the requirements of the course. Any in-class announcement, verbal or written, is considered official addendum to this syllabus.