PATH 5021

Biostatistics for Graduate Students

Fall 2016

CLASS DAYS and TIME: 15 weeks to be arranged between 7/1/16 and 12/16/16, preferably Monday and weds.

CLASSROOM: to be arranged

COURSE FACULTY: Thomas J Prihoda, PhD

OFFICE LOCATION and HOURS: 470.L, 8am to 5pm Monday to friday

EMAIL: prihodat@uthscsa.edu

TELEPHONE: 210-567-4018

READ THIS DOCUMENT CAREFULLY - YOU ARE RESPONSIBLE FOR ITS CONTENTS.

COURSE DESCRIPTION AND OBJECTIVES

Introductory statistics for graduate students including descriptive statistics, graphs, one sample and two sample t-tests, correlation and regression, oneway and twoway analysis of variance, with confidence intervals and sample size calculation and justification. Nonparametric versions for the above also. Executed using R.

Pre-requisites – Graduate student status.

Semester credit hours – Three (3) graduate student credit hours.

By the end of this course, each student should be able to:

- Understand and perform basic statistical analyses and graphics with R.
- Bar graphs, histograms, scatter plots, t-tests, F-tests, tests for normality, confidence intervals for one sample and two sample problems including proportions and non-parametric methods.

COURSE ORGANIZATION

The main teaching modalities used in this course include:

1) Lectures go through the examples in the text.

2) Problems are assigned from the text using data provided with the text.

3) Students present solutions to some of the problems as assigned and bring articles for discussion of statistics included in them.

Materials – Free software packages including basic R, UsingR to accompany the text, and RStudio to make using R easier.

Computer Access – Microsoft Windows, MAC OS X, or Linux.

Reading Assignments – Reading and homework assignments are primarily from Verzani, J, Using R for Introductory Statistics, 2nd edition, CRC Press, Boca Raton, Florida, 2014.

ATTENDANCE

Attendance is not required so long as the homework assignments are turned in regularly.

TEXTBOOKS

Required: Verzani, J, Using R for Introductory Statistics, 2nd edition, CRC Press, Boca Raton, Florida, 2014.

Recommended: Bring journal club articles with statistics of interest from the students' major.

GRADING POLICIES AND EXAMINATION PROCEDURES

Grades will be determined from grading the homework turned in as it is assigned from the text. Missed problems may be resubmitted for an additional half credit after they are initially graded.

Grading System

Include a grading scale used to determine final grades, see example below

A = 90-100% B = 80-89% C = 70-79% F = < 69%

REQUESTS FOR ACCOMODATIONS FOR DISABILITIES

In accordance with policy 4.2.3, **Request for Accommodation Under the ADA and the ADA Amendments Act of 2008 (ADAAA)**, any student requesting accommodation must submit the appropriate request for accommodation under the American with Disabilities Act (ADA, form 100). to his/her appropriate Associate Dean of their School and a copy to the ADA Coordinator. Additional information may be obtained at http://uthscsa.edu/eeo/request.asp.

ACADEMIC INTEGRITY AND PROFESSIONALISM

Any student who commits an act of academic dishonesty is subject to discipline as prescribed by the UT System Rules and Regulations of the Board of Regents. Academic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an exam for another person, signing attendance sheets for another student, and any act designed to give unfair advantage to a student or the attempt to commit such an act. Additional information may be obtained at http://catalog.uthscsa.edu/generalinformation/generalacademicpolicies/academicdishonestypolicy/

TITLE IX AT UTHSCSA

Title IX Defined:
Title of the Education Amendments of 1972 is a federal law that prohibits sex discrimination in education. It reads "no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance."

University of Texas Health Science Center San Antonio's Commitment:
University of Texas Health Science Center San Antonio (UTHSCSA) is committed to maintaining a learning environment that is free from discriminatory conduct based on gender. As required by Title IX, UTHSCSA does not discriminate on the basis of sex in its education programs and activities, and it encourages any student, faculty, or staff member who thinks that he or she has been subjected to sex discrimination, sexual harassment (including sexual violence) or sexual misconduct to immediately report the incident to the Title IX Director.

In an emergency, victims of sexual abuse should call 911. For non-emergencies, they may contact UPD at 210-567-2800. Additional information may be obtained at http://students.uthscsa.edu/titleix/

EMAIL POLICY

Students are encouraged to used e-mail to communicate with each other and with the instructor.

USE OF RECORDING DEVICES

Recording devices may be used if desired, by the students.

ELECTRONIC DEVICES

Other electronic devices may be used by the students if desired.

TENTATIVE CLASS SCHEDULE

PATH 5021

Biostatistics for Graduate Students

Fall 2016

WEEK	DATE	TOPIC	Assignment	Instructor and Modality
Week 1	To be	Introduction to R, statistics,	Ch.1	TP
Week 2	arranged	Types of data and measures of central tendency	Ch.2 through p.59	See text
Week 3		Measures of spread and basic data	Ch.2 and Ch.3 sections 1,2, and 3	
Week 4		Operations in R		
Week 5		Data description and	Ch.3 and Ch.4	
Week 6		Data tables and R		
Week 7		Multivariable graphics, distributions,	Ch.5 and Ch.6	
Week 8		And the central limit theorem		
Week 9		Statistical inference with	Ch.7 and Ch.8	
Week 10		Confidence intervals		
Week 11		Hypotheses tests	Ch. 9	
Week 12		Two sample and proportion tests	Ch. 10	
Week 13		Regression and correlation	Ch. 11	
Week 14		One way analysis of variance	Ch. 12 section 1	
Week 15		Two way and covariance analysis	Ch. 12	