***COURSE:***MATH 1388 – Introduction to Biostatistics with Honors

***TEXTBOOK:*** *Statistics for the Life Science, 4th edition*, by Samuels, Witmer and Schaffner (ISBN 13: 978-0321652805).

***PREREQUISITE:***College Ready TSI status in Mathematics Courses or College Ready for Non-Algebra Intensive Mathematics Courses or successful completion of any of the developmental mathematics initiatives (MATH 0290, MATH 0320, or MATH 0330) will allow entrance to the course.

***INSTRUCTOR:***XXX, **E-Mail:** XXX, ***OFFICE:***MAGC XXX, ***TELEPHONE:***665-XXX
***OFFICE HOURS:*** *XXX*

***COURSE DESCRIPTION:*** Topics include introduction to biostatistics; biological, medical, and health science studies and designs; introduction to statistical inferences; one- and two- sample inferences for means and proportions; one-way ANOVA and nonparametric procedures.

***COURSE WEBSITE*:** Some class notes, assignments, homework and other course materials and announcements will be posted on BLACKBOARD. Students are expected to check BLACKBOARD frequently.

***GRADE DISTRIBUTION*:** Students will be evaluated based on their performance in exams, pop-up quizzes, homework and attendance. The relative importance of each is listed below.

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| --- | --- |
| Attendance | 2% |
| Homework | 3% |
| Organized Notes, Summary Sheets | 2% |
| Pop-up Quizzes  | 13% |
| Three Midterm Exams | 20%  |
| Common Final Exam | 20% |

Course grades will be determined by 90~100=A, 80~89=B, 70~79=C, 60~69=D, 50~59=F. In addition, attendance, class participation, and homework will be used to determine border grades. Curve may be given for each exam depending on overall performance. There is NO extra credit. A grade of Incomplete (I) can be given ONLY in the event that an authorized absence or circumstances beyond your control were the cause of your missing a small portion of the course. This grade is not to be given because you feel that you have too much other work or study to do or because you think that you will not earn an acceptable grade in the course.

***HOMEWORK*:** Homework will be assigned after lecture of each chapter. However, homework will be collected on each Monday. All problems covered by class material up to the previous Wednesday should be turned in. You should turn-in stapled and clearly labeled homework. NO late homework will be accepted and NO EXCEPTIONS! The grading of homework will focus on effort, which usually means both steps and completeness. Solutions are in the appendix of the textbook. Students are responsible for checking their work with the solutions.

***ORGANIZED NOTES AND SUMMARY SHEETS*:** You need to take notes of the statistics knowledge while you 1) read the textbook, 2) work on discussion sheets and homework problems, as well as 3) participate in discussion during class. You can use the textbook chapters for index purposes. Loosely speaking, your stat knowledge notes are the condensed version of knowledge you mastered and it should be well organized. You are recommended to write a summary sheet for each chapter, which includes a) new technical terms, b) new notations; c) new theories/rules/procedures; d) linkage of knowledge points in this current chapter to those in previous chapters/sections.

***POP-UP QUIZZES*:** Through the semester, there will be about 10 pop-up quizzes. Well, you should know that pop-up means its date and time in class will not be told beforehand. There is NO makeup for such quizzes. The lowest score will be dropped in determining your quiz total. The quizzes will be graded based on 15 points and at the end the average will be used as your quiz grade toward the final letter grade. The grading of quiz will focus on correctness. Only solutions for difficult problems will be discussed in class. Students are responsible for checking their work with the textbook and class notes, or asking instructor.

***EXAMS*:** Three midterm exams will be given during class time and scheduled on

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Stat | 1st Midterm | 2nd Midterm | 3rd Midterm | Final Exam |
| 2330.12 | Sep 24 | Oct 22 | Nov 19 | Dec 17, 8~9:45pm |

All exams MUST be taken at the scheduled times. **NOTE: No Make-up Exams and NO EXCEPTIONS!** However, you may drop one midterm exam grade at the end of semester.

***FORMULA SHEETS AND CALCULATOR*:** A basic scientific calculator that will add, subtract, multiply, divide, compute factorials, and raise numbers to powers is required. Formula sheet(s) is (are) provided by me for all exams. You will be allowed to use a calculator on all exams and quizzes. Under no circumstances can you use wireless devices such as a cell phone as a calculator.

#### *COPYRIGHT NOTICE*: All class notes, handouts, exams, solutions, etc. are copyrighted and may not be reproduced and distributed without the instructor's written permission.

**Student Learning Outcomes for Biostatistics:**

1. Have basic concept of biostatistics and what biostatistics does for real-world problems.
2. To able to understand some popular biostatistical designs including data collection and handling.
3. To be able to represent and evaluate basic biostatistical information verbally, numerically, graphically and symbolically.
4. Become familiar of one- and two-sample inferences for mean and proportion, analysis of variance, basic regression analysis and some nonparametric procedures;
5. To be able to identify procedures appropriate (and inappropriate) to a given situation and to carry out appropriate statistical procedures.
6. To be able to interpret results from those statistical methods and communicate with other people.
7. Recognize the limitations of specific statistical methods.
8. To develop the view that statistics and mathematics is an evolving discipline, interrelated with human culture, and understands its connections to other disciplines.

***NEW UTRGV Core Objectives*** Students finishing a core curriculum course will be able to demonstrate the following objectives:

* ***CRITICAL THINKING (CT)*** is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion. This definition meets the THECB’s direction that critical thinking includes creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information; and is aligned with the UTRGV’s SLO for critical thinking skills.

In this course student will encounter a wide variety of problems asking them to apply tools learned for statistical analysis to new situations to assist in making conclusions. This process provides the backbone of the critical analysis of problems involving data that occur in almost every field of study.

Student learning objectives 1, 2, 3, 5, 6, and 7 align with this core objective. They will be assessed through specific questions on the tests used in the course.
* ***COMMUNICATION SKILLS (COM)*** include the development, expression, and revision of ideas through the effective use of language (writing, reading, speaking, and listening) across a variety of forums. Communication involves learning to work in many genres and styles while using different technologies, can result in mixing texts, data, and/or images, and develops through diverse experiences across the curriculum. This definition meets the THECB’s direction that communication skills include effective written, oral, and visual communication; and is aligned with UTRGV’s SLO for communication skills.

A strong focus of this course is to develop in students the ability to discuss mathematical and statistical ideas with fluency to both experts in mathematics and those with less experience. For many problems the process of the solution is as or more important than the solution itself, making communication a natural skill developed by the course. In the area of health, the communication of correct mathematical and statistical conclusions is of the utmost importance in the practice of the tools learned in this course.

Student assessments (both summative and formative) used for student learning objectives 2, 3, 6, 7, and 8 will address the development of students’ communications skills in the course.

* ***EMPIRICAL AND QUANTITATIVE SKILLS (EQS),*** which involve numeracy or quantitative reasoning, include competency in working with numerical data and mathematical reasoning. Individuals with strong mathematical skills possess the ability to reason and solve quantitative problems from a wide array of authentic contexts and everyday life situations. They interpret data and results and can create conjectures and arguments supported by quantitative evidence and/or mathematical reasoning, which they can clearly communicate in a variety of formats (using words, tables, graphs, and/or equations as appropriate). This definition meets the THECB’s direction that empirical and quantitative skills include applications of scientific and mathematical concepts; and is aligned with UTRGV’s SLO for empirical and quantitative skills.

The course strongly centers on the empirical and quantitative skills objective, which permeates almost every topic included in the course and course objectives. The qualitative and quantitative analysis of data is the core content of the course. These will be assessed through specific questions on the tests used in the course.

***SUGGESTIONS*:**

1. Attend class every day and be punctual so that you don’t miss a thing. At the end of the class, you will know that attending class and following the instructor help a lot to improve your grade.
2. Do reviewing after class and do your homework. Exercising is the only way to master the knowledge. Don’t expect to understand a topic the first time you see it.
3. Don’t hesitate to ask questions during or after class.
4. Relax. The course is probably not as difficult as you think.
5. Be positive. Enjoy your study with statistics.
6. Avoid to say following words when you are in class and studying:
	1. I do not care.
	2. Never mind.
	3. It is too difficulty for me.
	4. I hate math.
	5. I don’t know. (Then just sit with blank mind)

**UTRGV Policy Statements**

**Students with Disabilities**

If you have a documented disability (physical, psychological, learning, or other disability which affects your academic performance) and would like to receive academic accommodations, please inform your instructor and contact Student Accessibility Services to schedule an appointment to initiate services. It is recommended that you schedule an appointment with Student Accessibility Services before classes start. However, accommodations can be provided at any time. **Brownsville Campus**: Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at accessibility@utrgv.edu. **Edinburg Campus:** Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at accessibility@utrgv.edu.

**Mandatory Course Evaluation Period**

Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (http://my.utrgv.edu); you will be contacted through email with further instructions. Online evaluations will be available Nov. 18 – Dec. 9, 2015. Students who complete their evaluations will have priority access to their grades.

**Attendance**

Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV’s attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

**Scholastic Integrity**

As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism, and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.

**Sexual Harassment, Discrimination, and Violence**

In accordance with UT System regulations, your instructor is a “responsible employee” for reporting purposes under Title IX regulations and so must report any instance, occurring during a student’s time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect in an environment free from sexual misconduct and discrimination.

**Course Drops**

According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the “3-peat rule” and the “6-drop” rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.

**Electronic Communication Policy**

The university policy requires all electronic communication between the University and students be conducted through the official University supplied systems; namely UTRGV account for email or Blackboard for course specific correspondence. Therefore, please use your UTRGV assigned e-mail or Blackboard account for all future correspondence with UTRGV faculty and staff.