Introduction to Biostatistics Math 1343.03
Instructor: Dr. Xiaohui (Sophie) Wang
Fall 2019
Contact Info: 665-3454, xiaohui.wang@utrgv.edu
TR 11am-12:15pm EMAGC 1.422
EMAGC 3.802, TR 3:30pm-5pm

Textbook and/or Resource Material

ALEKS (required):
We will use ALEKS to learn this class's material. ALEKS stands for Assessment and LEarning in Knowledge Spaces, which is a web-based, artificially intelligent assessment and learning system. ALEKS uses adaptive questioning to quickly and accurately determine exactly what a student knows and doesn't know in a course. ALEKS then instructs the student on the topics she is most ready to learn.

Some Note on Using ALEKS:
- You need to self-register at the following website: http://www.aleks.com/. The course code is JHPP6-P4KHL. The regular cost is $81 for 18 weeks. I am trying to work with ALEKS to get the price of $65. No final word as of 8/29/2019. I will email you as soon as I hear from ALEKS. Please use the two weeks free code for now.
- ALEKS tutorials are available at http://www.aleks.com/independent/students/tour.

Course Description and Prerequisites
Topics include introduction to biostatistics; biological and health studies and designs; probability and statistical inferences; one- and two-sample inferences for means and proportions; one-way ANOVA and nonparametric procedures. Prerequisites: College Ready TSI status in Mathematics.

Learning Objectives/Outcomes for the Course
- Describe the basic concept of biostatistics and illustrate how biostatistics helps to solve real-world problems.
- Comprehend some popular biostatistical designs including data collection and handling.
- Represent and evaluate basic biostatistical information verbally, numerically, graphically and symbolically.
- Describe probability and probability distributions in the context of statistical problems.
- Comprehend various inferential techniques that include one- and two-sample inferences for mean and proportion, analysis of variance, basic regression analysis and some nonparametric procedures.
- Identify procedures appropriate (and inappropriate) to a given situation and carry out appropriate statistical procedures.
- Interpret results from those statistical methods and communicate with other people.
- Recognize the limitations of specific statistical methods.
- Develop the view that statistics is an evolving discipline, identify that it is interrelated with human culture, and establish its connections to other disciplines.

Learning Objectives for Core Curriculum Requirements
This course will address the core outcomes set by the Texas Higher Education Coordinating Board (THECB) by
- Critical Thinking Skills: self-motivated learning through ALEKS, in-class discussion, summary sheets of knowledge.
- Communication Skills: in-class discussion, study groups for flipped classroom.
- Empirical and Quantitative Skills: self-motivated learning through ALEKS.
- Teamwork: study groups for flipped classroom.
- Social Responsibility: study groups for flipped classroom.
- Personal Responsibility: self-motivated learning through ALEKS.

Grading Policies

Students will be evaluated based on their performance in categories listed in the table below. The relative importance of each is also provided below.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Evaluation Items</th>
<th>Weight for Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistical computations knowledge mastery,</td>
<td>ALEKS Pie (4%), Timely progress (15%), Weekly hours (1%)</td>
<td>20%</td>
</tr>
<tr>
<td>and self-paced learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efforts inside classroom</td>
<td>Attendance (10%)</td>
<td>10%</td>
</tr>
<tr>
<td>Efforts outside classroom</td>
<td>Group study or tutor hours (2%), and Total ALEKS study hours (3%)</td>
<td>5%</td>
</tr>
<tr>
<td>Statistical thinking, critical thinking, and</td>
<td>Summary Sheets (5%)</td>
<td>5%</td>
</tr>
<tr>
<td>independent learning habits</td>
<td>Quizzes in Blackboard</td>
<td></td>
</tr>
<tr>
<td>Statistical thinking and computations</td>
<td>Midterm: Oct 22, 2019 during class time</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>Blackboard part 50% of pts + ALEKS part 50% of pts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Comprehensive Final Exam, Dec 10, 2019, 10:15am-noon</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>Blackboard part 50% of pts + ALEKS part 50% of pts</td>
<td></td>
</tr>
</tbody>
</table>

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.

Statistical computations knowledge mastery, and self-paced learning:

ALEKS pie:

ALEKS will record each student's completion and mastery level of the assigned topics for the course. You are expected to master all topics by midnight of final exam day and partial credits will be given.

Timely progress:

There will be nine checking points: Sep 5 (finish 15 topics, i.e. finish course readiness), Sep 19 (finish 29 topics, i.e. finished chap 2), Oct 10 (finish 43 topics, i.e. finished chap 4), Oct 17 (finish 44 topics, i.e. finish chap 5), Nov 5 (finish 49 topics, i.e. finish chap 6), Nov 26 (finish 55 topics, i.e. finish chap 8), and Dec 5 (finish 64 topics, i.e. finish chap 12) to ensure timely progress. Partial credits are given for these categories in ALEKS.

Weekly hours:

You are required to spend at least 1.5 hours to log in ALEKS on a weekly basis to study statistical computations for this course, starting from the second week of semesters and each week starts from the Sunday to the Saturday of the week. Yes, you are strongly encouraged to study regularly, instead of study for one long period and then rest for a long period before next study time. The latter produced more failing grades based on educational studies and past students' experiences. To offset those who study very efficiently, here is the way: If you are the top five students according to the ALEKS knowledge mastery (checked twice on Midterm day and on Dec 5. On an extreme case, whenever a student finishes all topics in ALEKS), you are automatically have full credit on this item.
Efforts inside classroom:

Attendance:
Attendance will be recorded via sign-in paper. If you do homework of other courses during this class meeting time, you will be count as absent for that class. If you miss four or more class meetings, the instructor may DROP you from the class. Students with no more than 2 missing classes will get full credit for attendance.

Efforts outside classroom:

Total ALEKS study hours:
Students whose total log in hours in ALEKS is more than 30 hours will be given full credit for study hours. To offset those who study very efficiently, here is the way: If you are the top five students according to the ALEKS knowledge mastery (checked twice on Midterm day and on Dec 1. On an extreme case, whenever a student finishes all topics in ALKES), you are automatically have full credit on this item.

Group study or tutor hours:
Students whose total log in hours at tutoring lab/group is more than TBD hours (sorry, don't have a number till the end of the semester) will be given full credit for this item.

Statistical thinking, critical thinking, and independent learning habits:

Summary Sheets:
You will be required to do several summary sheets throughout the semester. Professor will give you the instruction when it is time.
Some suggestion on what summary sheets to make:
1. Notation sheet (required): to summary all math/stat notations used in this course. Write each notation and their meaning in a clear and organized way.
2. Summary sheet for descriptive statistics (required): to summary the corresponding descriptive statistics items for different combinations of different types of data and dimensions. Empty summary table will be provided by Dr. Wang and you should fill it in.
3. Summary sheets for each inferential statistical procedure (required): e.g., a summary sheet for independent two-sample t-test, a summary sheet for paired two-sample t-test, a summary sheet for ANOVA. For each procedure, write an example problem, 1) identify the population(s), variable(s), and what descriptive stat you should do, and then 2) list all components to carry out the inferential procedure.
4. Chapter-wise summary sheets (optional): You are encouraged to write a short summary (no more than 2 one-sided pages) for each chapter, which includes technical terms/concepts; theories/rules/procedures; linkage of knowledge points in this current chapter to those in previous chapters/sections.

Quizzes:
Quizzes will be used to check your progress, as well as your mastery of statistical concepts and statistical thinking. Quizzes are pop-up quizzes for the whole class.

To see the Quiz questions and solutions after grade is posted, look at "My Grades" tab.
Once there, click on the quiz score and a page will open that contains all the questions, the ones the student got correct and those he/she got wrong(along with showing the correct answer to questions missed).

Statistical thinking and computations

Midterm and Comprehensive Final Exams:
There will be a midterm and a comprehensive final exam that will be implemented via computer, on ALEKS and BLACKBOARD. Practice tests will be provided when the date is close to the exams.

To see the midterm (or practice final exam) questions and solutions after test grade is posted, look at "My Grades" tab.
Once there, click on the midterm test score and a page will open that contains all the test questions, the ones the student got correct and those he/she got wrong (along with showing the correct answer to questions missed).

**Calendar of Activities**

Sep 5 (finish 15 topics, finish course readiness),
Sep 19 (finish 29 topics, i.e. finished chap 2),
Oct 10 (finish 43 topics, i.e. finished chap 4),
Oct 17 (finish 44 topics, i.e. finish chap 5),
Nov 5 (finish 49 topics, i.e. finish chap 6),
Nov 26 (finish 55 topics, i.e. finish chap 8),
Dec 5 (finish 64 topics, i.e. finish chap 12).

The UTRGV academic calendar can be found at [https://my.utrgv.edu/home](https://my.utrgv.edu/home) at the bottom of the screen, prior to login. Some important dates for Fall 2019 include:

- August 26: First day of classes
- August 29: Last day to add a course or register for Fall 2019
- September 2: Labor Day Holiday – NO classes
- November 13: Last day to drop a course; will count toward the 6-drop rule
- November 28 - 29: Thanksgiving Holiday - NO classes
- December 5: Study Day – NO classes
- December 6 - 12: Final Exams
- December 13 - 14: Commencement Exercises

**Other Course Information**

Please check the instructor's teaching website at faculty.utrgv.edu/xiaohui.wang/teaching.html. Note later this website will switch to UTRGV faculty links.

**UTRGV Policy Statements**

The UTRGV disability accommodation, mandatory course evaluation statement and sexual misconduct statement are required on all syllabi. Additional policy statements are optional, such as those covering attendance, academic integrity, and course drop policies.

**STUDENTS WITH DISABILITIES:** Required on all syllabi. Do not modify.

Students with a documented disability (physical, psychological, learning, or other disability which affects academic performance) who would like to receive academic accommodations should contact **Student Accessibility Services (SAS)** as soon as possible to schedule an appointment to initiate services. Accommodations can be arranged through SAS at any time, but are not retroactive. Students who experience a broken bone, severe injury, or undergo surgery during the semester are eligible for temporary services.

**Pregnancy, Pregnancy-related, and Parenting Accommodations**

Title IX of the Education Amendments of 1972 prohibits sex discrimination, which includes discrimination based on pregnancy, marital status, or parental status. Students seeking accommodations related to pregnancy, pregnancy-related condition, or parenting (reasonably immediate postpartum period) are encouraged to contact Student Accessibility Services for additional information and to request accommodations.

**Student Accessibility Services:**

**Brownsville Campus:** Student Accessibility Services is located in 1.107 in the Music and Learning Center building (BMSLC) and can be contacted by phone at (956) 882-7374 or via email at ability@utrgv.edu.

**Edinburg Campus:** Student Accessibility Services is located in 108 University Center (EUCTR) and can be contacted by phone at (956) 665-7005 or via email at ability@utrgv.edu.
MANDATORY COURSE EVALUATION PERIOD: Required on all syllabi. Do not modify.
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. Students who complete their evaluations will have priority access to their grades. Online evaluations will be available on or about:

Module 1 October 2nd – 8th
Module 2 November 27th – December 3rd
Full Fall Semester November 14th – December 4th

ATTENDANCE: Recommended on all syllabi; may be modified by the instructor as long as it is not inconsistent with UTRGV policy.
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 DISHONESTY: Recommended on all syllabi.
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 (including self-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 Student Rights and Responsibilities.

SEXUAL MISCONDUCT and MANDATORY REPORTING: Required on all syllabi. Do not modify.
In accordance with UT System regulations, your instructor is a “Responsible Employee” for reporting purposes under Title IX regulations and so must report to the Office of Institutional Equity & Diversity (oie@utrgv.edu) any instance, occurring during a student’s time in college, of sexual misconduct, which includes sexual assault, stalking, dating violence, domestic violence, and 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 that is free from sexual misconduct, discrimination, and all forms of violence. If students, faculty, or staff would like confidential assistance, or have questions, they can contact OVAVP (Office for Victim Advocacy & Violence Prevention) at 665-8287, 882-8282, or OVAVP@utrgv.edu.

COURSE DROPS: Recommended on all syllabi; may be modified by the instructor as long as it is not inconsistent with UTRGV policy.
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.

STUDENT SERVICES: Recommended on all syllabi.
Students who demonstrate financial need have a variety of options when it comes to paying for college costs, such as scholarships, grants, loans and work-study. Students should visit the Students Services Center (U Central) for additional information. U Central is located in BMAIN 1.100 (Brownsville) or ESSBL 1.145 (Edinburg) or can be reached by email (ucentral@utrgv.edu) or telephone: (888) 882-4026. In addition to financial aid, U Central can assist students with registration and admissions.
Students seeking academic help in their studies can use university resources in addition to an instructor's office hours. University Resources include the Advising Center, Career Center, Counseling Center, Learning Center, and Writing Center. The centers provide services such as tutoring, writing help, critical thinking, study skills, degree planning, and student employment. Locations are:

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<thead>
<tr>
<th>Center Name</th>
<th>Brownsville Campus</th>
<th>Edinburg Campus</th>
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</thead>
<tbody>
<tr>
<td>Advising Center</td>
<td>BMAIN 1.400</td>
<td>ESWKH 101</td>
</tr>
<tr>
<td></td>
<td>(956) 665-7120</td>
<td>(956) 665-7120</td>
</tr>
<tr>
<td>Career Center</td>
<td>BCRTZ 129</td>
<td>ESSBL 2.101</td>
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<tr>
<td></td>
<td>(956) 882-5627</td>
<td>(956) 665-2243</td>
</tr>
<tr>
<td>Counseling Center</td>
<td>EUCTR 109</td>
<td>BSTUN 2.10</td>
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<tr>
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<td>(956) 665-2574</td>
<td>(956) 882-3897</td>
</tr>
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<td>Learning Center</td>
<td>BMSLC 2.118</td>
<td>ELCTR 100</td>
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<tr>
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<td>(956) 882-8208</td>
<td>(956) 665-2585</td>
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<tr>
<td>Writing Center</td>
<td>BUBLB 3.206</td>
<td>ESTAC 3.119</td>
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<td></td>
<td>(956) 882-7065</td>
<td>(956) 665-2538</td>
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