Probability and Statistics - MATH 6365 – 95L - 24951  
Fall 2016  
*All times indicated in this syllabus are in Central Standard Time (CST)*

**Instructor**  
Tamer Oraby  
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Phone: 665-3536; E-mail: tamer.oraby@utrgv.edu  
Web Page: [https://faculty.utpa.edu/orabytf/](https://faculty.utpa.edu/orabytf/)

**Office hours**  
By appointment (send me email to make appointment), we can meet using Blackboard Collaborate in the navigation bar of Blackboard page of the course.

**Meeting time and place**  
It will be recorded and posted on blackboard.

**Textbook**  

**Course Description**  
The course is to provide regular mathematical knowledge of probability and statistics techniques and concepts. The main topics that will be introduced and discussed are: basic probability theory, transformations and expectations, common families of probability distributions, joint and marginal distributions, conditional distributions and independence, limit theorems and distributions.

**Prerequisite**  
Consent of instructor.

**Homework:**  
HW will be assigned from textbook every few lectures. They could be handed in in class or be submitted through blackboard under the Homework folder in the navigation bar.

**Group work:**  
You are highly encouraged to study and work in teams and solve the problems together. But please submit your own solution and not a copy of someone else’s solution. The latter will not be tolerated.

**Midterm:**  
There will be two midterm exams on **Monday 10/03/16** and **Wednesday 11/09/16**.

**Final Exam:**  
A final exam on **Monday 12/12/16** from 8:00 to 9:45 PM.

**Grading policy:**  
Homework 25%; Two midterm exams: 50% (=2x25%); Final exam 30%. (Total 105%)

**Grade Distribution:**  
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<thead>
<tr>
<th>Grade Range</th>
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<tbody>
<tr>
<td>90-100%</td>
<td>A</td>
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<tr>
<td>70-79%</td>
<td>C</td>
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<tr>
<td>60-69%</td>
<td>D</td>
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<tr>
<td>0-59%</td>
<td>F</td>
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**Special Accommodations:**  
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.

**Drop 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.

**Makeup Policy**

In case of illness and in rare cases of other conflicts, students with documented excuses may request to take a makeup exam after scheduled exam. In all cases, makeup must be requested before the regularly scheduled exam.

**Important Dates**

- **September 1**: Last day to add or register for Fall classes
- **September 1**: Last day to withdraw (drop all classes) for a 80% refund
- **September 5**: Labor Day Holiday; university closed
- **September 14**: Last day to drop a class before it appears on the transcript and counts toward the “6-drop” limit.
- **October 3**: Midterm Exam 1
- **November 9**: Midterm Exam 2
- **November 17**: Last day to drop (DR grade) a class or withdraw (W)
- **November 24-25**: Thanksgiving Holiday; university closed
- **December 8**: Study Day; no classes
- **December 12**: Final Exam 8:00 – 9:45 PM

**Electronic Communication Policy:**

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

**Mandatory Course Evaluations**

Mandatory Course Evaluations Period (November 18 – December 8). 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 Nov. 18 – Dec. 8, 2016.

**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](http://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.
**Student Learning Outcomes:** After completing this course students will

1. Understand the difference among discrete, continuous and mixture probability distributions and calculate probabilities involving them.
2. Understand the concepts of moments and moment generating functions.
3. Understand certain classes of discrete and continuous probability distributions and their main properties.
4. Have thorough ideas on joint and conditional probability distributions.
5. Emphasize on bivariate normal distributions and understand the concept of joint moment generating functions.
6. Understand the concepts of transformation of variables, concepts of Jacobians for one and two dimensions.
7. Be able to work with sampling distributions within the normal framework.
8. Become familiar with the sufficiency principle in the context of data reduction in statistics.
10. To construct and evaluate point estimators using different methods.
11. Understand the Likelihood Ratio Test.
12. Understand the Bayesian Tests.
13. Construct a variety of confidence intervals.
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<tr>
<th>Date</th>
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<td>Review: 1.1-1.3</td>
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<td>Test 1</td>
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<td>10/12</td>
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Final Exam
8:00-9:45pm
Monday 12/12