COURSE INFORMATION:
Classroom:  SYNONRONOUS ONLINE (Blackboard Collaborative)
CRN:  19408  Class Time:  3:00 – 4:20 MW

INSTRUCTOR:  Scott Starks, PhD, PE, Professor of Engineering Leadership
OFFICE:  203 B Engineering Building
PHONE:  (915) 747-8856
EMAIL:  sstarks@utep.edu
OFFICE HOURS:  1:00 – 2:30 Tuesdays and Thursdays or by appointment
PEER LEADER:  Zachary Chanoi
Email:  zchanoi@miners.utep.edu
Office Hours:  TBD

Available in:
Printed form (UTEP Bookstore)
Online  https://www.amazon.com/First-Course-Probability-10th/dp/0134753119

CATALOG DESCRIPTION:  Problems involving discrete and continuous random variables, distribution functions, moments, statistical dependence, and an introduction to statistical methods. Emphasis to be on formulation of physical problems. Prerequisite:  MATH 2313 with a grade of “C” or better. Prerequisite for Computer Science Sequence students:  MAT 2300 with a grade of “C” or better.

This is a synchronous, online course.

You will be required to come to campus two times during the term in order take Mid-Term Exams. Otherwise the class will be held online.
COVID-19 Precautions:
You must STAY AT HOME and REPORT if you (1) have been diagnosed with COVID-19, (2) are experiencing COVID-19 symptoms, or (3) have had recent contact with a person who has received a positive coronavirus test. Reports should be made at screening.utep.edu. If you know anyone who should report any of these three criteria, encourage them to report. If the individual cannot report, you can report on their behalf by sending an email to COVIDaction@utep.edu.

For each day that you attend campus—for any reason—you must complete the questions on the UTEP screening website (screening.utep.edu) prior to arriving on campus. The website will verify if you are permitted to come to campus. Under no circumstances should anyone come to class when feeling ill or exhibiting any of the known COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, and alternative instruction will be provided. Students are advised to minimize the number of encounters with others to avoid infection.

Wear face coverings when in common areas of campus or when others are present. You must wear a face covering over your nose and mouth at all times in this class. If you choose not to wear a face covering, you may not enter the classroom. If you remove your face covering, you will be asked to put it on or leave the classroom. Students who refuse to wear a face covering and follow preventive COVID-19 guidelines will be dismissed from the class and will be subject to disciplinary action according to Section 1.2.3 Health and Safety and Section 1.2.2.5 Disruptions in the UTEP Handbook of Operating Procedures.

Please note that if COVID-19 conditions deteriorate in the City of El Paso, all course and lab activities may be transitioned to remote delivery.

COVID-19 Accommodations:
Students are not permitted on campus when they have a positive COVID-19 test, exposure or symptoms. If you are not permitted on campus, you should contact me as soon as possible so we can arrange necessary and appropriate accommodations.

Students who are considered high risk according to CDC guidelines and/or those who live with individuals who are considered high risk may contact Center for Accommodations and Support Services (CASS) to discuss temporary accommodations for on-campus courses and activities.

TECHNOLOGY REQUIREMENTS:
Course content is delivered via the Internet through the Blackboard learning management system (LMS). Ensure your UTEP e-mail account is working and that you have access to the Web and a stable web browser. Mozilla Firefox and Google Chrome are the most supported browsers for Blackboard; other browsers may cause complications with the LMS. When having technical difficulties, update your browser, clear your cache, or try switching to another browser.
You will need to have or have access to a computer/laptop, scanner, a webcam, and a microphone. You will need to download or update the following software: Microsoft Office, Adobe, Flashplayer, Windows Media Player, QuickTime, and Java. Check that your computer hardware and software are up-to-date and able to access all parts of the course.

If you encounter technical difficulties beyond your scope of troubleshooting, please contact the Help Desk https://www.utep.edu/technologysupport as they are trained specifically in assisting with technological needs of students.

NETIQUETTE:

- Always consider the audience. Remember that members of the class and the instructor will be reading any postings.
- Respect and courtesy must be provided to classmates and to instructor at all times. No harassment or inappropriate postings will be tolerated.
- When reacting to someone else’s message, address the ideas, not the person. Post only what anyone would comfortably state in a F2F situation.
- Blackboard is not a public internet venue; all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended for classmates and professor only. Please do not copy documents and paste them to a publicly accessible website, blog, or other space. If students wish to do so, they have the ethical obligation to first request the permission of the writer(s).
COURSE DESCRIPTION: EL 3373 is a course that introduces the topic of probability, an important area of mathematics with many practical applications in electrical and computer engineering and computer science. At the conclusion of this course, you will have developed a number of practical skills that you can use in the future. Many of you will go on to graduate studies and will use concepts and techniques from probability to process data relating to your graduate projects, theses and dissertations. Additionally, many of you who go on to careers in industry will apply probability in the context of manufacturing, quality control and assurance, modeling, and simulation.

LEARNING OBJECTIVES: At the end of the semester, a student will be able to:
1. Solve basic counting problems involving permutations and combinations of equally-likely events.
2. Use elements of set theory and axioms of probability to determine the probability of complex events, and apply Bayes Theorem to the solution of conditional probability problems.
3. Solve problems involving independent events and independent random variables.
4. Determine marginal and joint cumulative distribution functions (CDF), probability mass functions (PMF) and probability density functions (PDF) and use them to compute various expected values of discrete and continuous random variables.
5. Solve problems involving Gaussian, uniform, exponential, binomial, and Poisson random variables.
6. Compute PDF’s and CDF’s of a function of a random variable.
7. Compute expected values of sums of RV’s and the covariance and correlation of pairs of random variables.
8. Use the Central Limit Theorem, significance tests and hypothesis tests in introductory statistics problems.

GRADING POLICY: Your Final Average will be based on the following:
- **2 Mid Term Exams** (25% each)
- **Final Exam** (25%)
- **Homework** (25%)

Your letter grade in the course will be based upon your Final Average as shown below:

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<tr>
<th>Grade</th>
<th>Percentage</th>
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<tr>
<td>A</td>
<td>90 – 100</td>
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<td>B</td>
<td>80 – 89</td>
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<td>C</td>
<td>70 – 79</td>
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<td>D</td>
<td>60 – 69</td>
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<td>&lt; 60</td>
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Mid Term Exams: There will be two Mid Term Exams for this course. **Both Mid Term Exams will be held on campus (details to be provided at a later date.)**
- First Mid Term Exam: September 9 at 3:00 – 4:20 PM.
- Second Mid Term Exam: November 9 at 3:00 – 4:20 PM.
**Final Exam**: The Final Exam will be held in an online manner on December 7 at 1:00 – 3:45 PM. You will not need to come to campus to take the Final Exam.

It is the policy of the university not to administer a second final examination in the course. It is also university policy that students shall not have more than two final examinations in a single day. In the unlikely event that the examination schedule results in a student having three final examinations on a single day, the faculty member upon the request of the student shall reschedule the second of that student’s three examinations.

**Homework Assignments:**
Assignments for this course will be available in Blackboard on a weekly basis. You will submit your Solutions to Homework Assignments in pdf form through Blackboard. Homework will be due by the start of class at 3:00 PM on the deadline date.

- Late Homework will **NOT** be graded. If you miss the deadline you will not receive a grade.
- **If you are having an issue with Blackboard,** email your work to the the Peer Leader before the deadline and let your instructor know about the problem.
- **NOTE:** Work can be submitted before the deadline in all instances. You are encouraged to submit your work early in order to avoid any last minute problems that may arise with Blackboard.

**Missed Exams**: Exams can only be made up for official University excused absences. Please check the undergraduate catalog for a list of official excused absences. Students who miss an Exam for approved absences should contact the Instructor as soon as possible to arrange to take a Make Up Exam.

**UTEP Sanctioned Absences**: All UTEP sanctioned absences, such as traveling with a team or attending a conference must be excused. Instructors must excuse military deployments or National Guard duty. Instructors may use discretion regarding documented medical or family emergencies.

**Class Participation and Attendance**: Class functionality, assignments and activities rely heavily on your early understanding of expectations. This is **NOT** a self-paced course and the calendar must be followed. Online participation is **REQUIRED**. You are expected to complete assignments by the posted due dates. You are also required to respond to all emails and complete conferences with the Peer Leader and instructor.

**DROP POLICY**: If a student decides to drop the course, it is the student’s responsibility to do so. As an ELEAD student you should meet with your Advisor before dropping a course as it may impact your Financial Aid, scholarships, Military funding, or Student Visa. If you drop before the UTEP drop deadline or are dropped by the instructor you will receive a "W," which is non-exempt and counts toward the 6-course drop limit. If you drop yourself or are dropped by the
instructor after the deadline, you will receive an "F." Exceptions will be made only for documented medical emergencies.

**ATTENDANCE POLICY**: You are required to be logged onto Blackboard Collaborative during class times. Attendance is mandatory since during class you will be given the tools needed to successfully complete this class. You must contact your peer leader and/or instructor if you know you will be absent by email. It is your responsibility to get all the lecture notes, assignments, and hand-outs you missed. An excused absence will only be given as described in the undergraduate catalog. Attendance will be monitored by your logging into Blackboard Collaborative for each Class Period. If you do not log in, you will be counted as Absent.

**Impact of Absences on Final Grade:**
- Each unexcused absence will result in a deduction of 2% from your final average.
- Excessive absences (4 class periods) will result in an administrative withdrawal or a grade of F.

**Academic Conduct**: Academic dishonesty will not be tolerated. You must submit your work only. If you are found to be cheating or plagiarizing, you will be subject to disciplinary action, per UTEP catalog policy (http://www.utep.edu/dos/acadint.htm).

**Copyright Statement**: Some of the materials in this course are copyrighted. Violation of US copyright law can result in civil damages up to $100,000 for each work copied. Copying of textbooks is not “fair use” under the Copyright Act. The “fair use doctrine” only permits non-commercial copying of part (in general, not more than 10%) of a copyrighted work. Do not bring a copied textbook to this class. Your cooperation is expected.

**Harassment**: Please be aware that harassment is unacceptable in the classroom. Jokes, comments of sexual nature, as well as racist comments will not be tolerated. The student that violates this rule will be sent to the Dean of Students for disciplinary action.

**Student Conduct**: [From the Handbook of Operating Procedures: Student Affairs] All students are expected and required to obey federal, state, and local laws, to comply with the Regents' Rules and Regulations, with The University of Texas System and University rules and regulations, with directives issued by an administrative official of the U.T. System or The University of Texas at El Paso in the course of his or her authorized duties, and to observe standards of conduct appropriate for an academic institution.

**Scholastic Dishonesty** [From the Handbook of Operating Procedures: Student Affairs] Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic 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 examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

**Syllabus Change Policy:** Except for changes that substantially affect the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice. Any changes made to the syllabus will be notified to the students by the instructor prior to the lecture week.

**Students with Disabilities Policy:** If you have or suspect a disability and need an accommodation, you should contact the Center for Accommodations and Support Services at 747-5148 or at cass@utep.edu or go to Room 106 Union East Building.

I welcome you to a new semester and hope that you will make the effort to learn as much as you can. I know each one of you has the potential to make an A.

**Important Fall 2020 Dates:**

- Labor Day – No classes
  - September 7
- Census Day
  - September 9
- First Mid Term Exam (on-campus)
  - September 30
- Fall Drop/Withdrawal deadline
  - October 30
- Second Mid Term Exam (on-campus)
  - November 9
- Thanksgiving – No classes
  - November 26 – 27
- Dead Day
  - December 4
- Final Exam (Online)
  - December 7 (1:00 – 3:45 PM)
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<tr>
<th>Date</th>
<th>Class Topic (subject to change)</th>
<th>Homework</th>
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| 08/24  | Introduction. Syllabus.  
BOOK-CHAPTER 1 - Combinatorial Analysis                                                            | Buy Textbook. Read Chapter 1  
Assign HW 1                                      |
| 08/26  |                                                                                               |                                               |
| 08/31  | BOOK-CHAPTER 2 – Axioms of Probability                                                           | DUE: HW 1  
Assign HW 2                                      |
| 09/02  |                                                                                               |                                               |
| 09/07  | LABOR DAY HOLIDAY NO CLASSES                                                                    |                                               |
| 09/09  |                                                                                               | DUE: HW 2  
Assign HW 3                                      |
| 09/14  |                                                                                               |                                               |
| 09/16  | BOOK-CHAPTER 3 – Conditional Probability and Independence                                     | DUE: HW 3  
Assign HW 4                                      |
| 09/21  |                                                                                               |                                               |
| 09/23  |                                                                                               | DUE: HW 4  
Assign HW 5                                      |
| 09/28  |                                                                                               |                                               |
| 09/30  | Mid-Term Exam 1 (On Campus)                                                                     |                                               |
| 10/05  | BOOK-CHAPTER 4 – Random Variables                                                              | Assign HW 6                                      |
| 10/07  |                                                                                               |                                               |
| 10/12  | BOOK-CHAPTER 5 – Continuous Random Variables                                                     | DUE: HW 6  
Assign HW 7                                      |
| 10/14  |                                                                                               |                                               |
| 10/19  |                                                                                               |                                               |
| 10/21  | BOOK-CHAPTER 6 – Jointly Distributed Random Variables                                           | DUE: HW 7  
Assign HW 8                                      |
| 10/26  |                                                                                               |                                               |
| 10/28  | BOOK-CHAPTER 7 – Properties of Expectation                                                       | DUE: HW 8  
Assign HW 9                                      |
| 11/02  |                                                                                               |                                               |
| 11/04  |                                                                                               | DUE: HW 9                                      |
| 11/09  | Mid-Term Exam 2 (On Campus)                                                                     |                                               |
| 11/11  | Central Limit Theorem                                                                            | Assign HW 10                                     |
| Week 13 | 11/16 | **Statistical Hypothesis Testing** | DUE: HW 10  
Assign HW 11 |
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| Week 14 | 11/22 | DUE: HW 11  
Assign HW 12 |
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<th>Week 15</th>
<th>11/30</th>
<th>DUE: HW 12</th>
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<tr>
<th>12/04</th>
<th><strong>DEAD DAY-NO CLASSES</strong></th>
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**FINALS’ WEEK DEC 7-DEC 11**

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<tr>
<th>Week 16</th>
<th>12/07</th>
<th><strong>Final Exam (On Line) 1:00 – 3:45</strong></th>
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