Probability Theory (MATH 461/661) Course Syllabus – Fall 2016
AB 101, TR 9:30-10:45am

Instructor: Dr. Deena Schmidt, Office: DMSC 219
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Office Hours: T 12-1pm, W 1-2pm, or by appointment
Course Website: http://wolfweb.unr.edu/~drschmidt/Fa16

- **Course Catalog Description**: Probability space axioms; random variables; expectation, univariate and multivariate distribution theory, sequences of random variables, Chebychev inequality, law of large numbers, and central limit theorem.

- **Course Prerequisite**: Math 283.


- **Course Content**: Book chapters 1-4, and some additional material.

- **Student Learning Outcomes**: Upon successful completion of Math 461/661, students will be able to:
  - Recognize the role of probability theory in the sciences.
  - Communicate main ideas and results of probability.
  - Define and apply the concepts of sample space, events, probability, random variables and their distributions, joint probability distributions, expectation, variance and covariance of random variables.
  - Formulate and apply theorems concerning functions of random variables and moment generating functions, Chebyshev’s theorem, the Central Limit Theorem and Law of Large Numbers.
  - Those enrolled in Math 661 will also be able to formulate and apply the definitions of convergence in distribution and in probability, and formulate scientific problems involving randomness in mathematical terms.

- **General Rules**: All students in this class are expected to respect each other and the instructor. Any form of disruption or disrespect to other students or to the instructor will not be tolerated. Please be on time. All electronic devices need to be turned off (or silent) during class. If found reading, texting, or browsing on a phone/tablet/computer during lecture, you will be asked to leave.

- **Undergraduate vs. Graduate Work**: All homework and exams may differ for undergraduate (461) and graduate (661) students. I expect graduate students to attain a deeper understanding of the material and to show a higher level of maturity in the presentation of homework/exam solutions.

- **Homework**: Homework will be assigned weekly and collected at the beginning of class on Thursdays. A subset of the assigned problems will be graded. Please write legibly! Your solutions must show all relevant work and be a clear explanation of your reasoning. The same applies to exams.
• **Exams:** There will be two in class (midterm) exams and a comprehensive final exam. Tentatively, Exam 1 will be early October and Exam 2 will be mid-November.

• **Final Exam:** Tuesday December 20, 2016 12:30-2:30pm

Prior to the Final Exam, a *pre-final* score will be calculated that is 25% Homework, 75% Midterm Exams. Near the end of the term, you will be given this pre-final score in class, along with the opportunity to opt out of the final exam and accept your pre-final score as your final grade for this course. The date of this class will be announced in class and on the course website later in the semester. This will be a one-time opportunity. You must be present in class that day to sign an appropriate document in order to take the opportunity to opt out of the final. You may not take the final and then request to use your pre-final score.

If you decide to take the final, your grade for the course will be calculated after the final as follows:

- **Homework:** 25%
- **Midterm Exams:** 50%
- **Final Exam:** 25%

• **Grading Scale:** You will be assigned at least an

  - A if your score is between 90% and 100%
  - B if your score is between 80% and 89%;
  - C if your score is between 70% and 79%;
  - D if your score is between 60% and 69%;
  - F if your score is below 60%.

• **Makeup/Late Policy:** Late homework will not be graded. There will be no early or makeup exams. If you miss an exam for a valid reason, your final exam will be weighted accordingly. Students participating in official university activities that interfere with exams must make arrangements with the instructor at least two weeks prior to the exam in question.

• **Academic Dishonesty:** Cheating, plagiarism or otherwise obtaining grades under false pretenses constitute academic dishonesty according to the code of this university. Academic dishonesty will not be tolerated. Any student caught attempting to cheat, cheating or helping another student cheat will receive a grade of F for the course. Students in this course are expected to abide by the academic standards and policies of UNR. For more details, see [http://www.unr.edu/stsv/acdispol.html](http://www.unr.edu/stsv/acdispol.html).

• **Disability Services:** If you are a student with a disability that requires academic adjustments or accommodations, please notify the Disability Resource Center (Thompson Building, Suite 101), and then me, as soon as possible to arrange for appropriate accommodations.

• **Statement on Audio and Video Recording:** This class may be videotaped or audio recorded only with the written permission of the instructor. In order to accommodate students with disabilities, some students may be allowed to record class lectures and discussions. Therefore, your comments and actions during class may be recorded. Surreptitious or covert video-taping of class or unauthorized audio recording of class is prohibited by law and by Board of Regents policy.