Course Announcement - Autumn 2017
STAT 421-01: Probability Theory,
With introduction to actuary P-exam (exam 1- probability)

Time: TR 4:00pm-5:20pm, location: Math 108  
Level: Undergraduate-Graduate

Instructor: Ekaterina Smirnova, ekaterina.smirnova@mso.umt.edu

Probability theory began in seventeenth century France when the two great French mathematicians, Blaise Pascal and Pierre de Fermat, corresponded over two problems from games of chance. Today, probability theory is a well-established branch of mathematics that finds applications in every area of scholarly activity from music to physics, and in daily experience from weather prediction to predicting the risks of new medical treatments. This course is designed as an introductory probability course taken by sophomores, juniors, and seniors in mathematics, the physical and social sciences, business and economy, engineering, computer and actuarial science. It presents a thorough treatment of probability ideas and techniques necessary for a firm understanding of the subject.

The course will cover fundamentals of probability; discrete and continuous random variables; expected value; variance; joint, marginal, and conditional distributions; conditional expectations; applications; simulation; central limit theorem; order statistics. Additionally, this year the course will incorporate discussion of problems covered on the actuary exam P/Exam 1. Actuarial science is the discipline that applies mathematical and statistical methods to assess risk in insurance, finance, and other industries is among the top ranked jobs in the United States (http://www.beanactuary.org/why/). Entry level positions and internships are open to mathematics, statistics and finance students and typically require students to pass at least one of (or better both) preliminary probability (P) and financial mathematics (FM) exam (http://www.beanactuary.org/exams/preliminary/?fa=preliminary-computer-based-exams). STAT 421 class covers topics necessary for passing the P-exam.

Credits: 3

Prerequisites: MATH 273 or consent with instructor, STAT 341 recommended. If you know how to differentiate and integrate a function of 1 or 2 variables you will be fine.