TEXAS A&M UNIVERSITY

SYLLABUS

Math 419 - Fall 2013

Instructor: Heather Ramsey
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Office: Blocker 638
Office hours: T 2:45-3:45pm,
R 5:15-6pm, & by appt

Class Time and Location: Math 419-500 meets Tuesdays and Thursdays 3:55pm-5:10pm in BLOC 164 starting August 26, 2013. The last day that class will meet in BLOC 164 is Nov. 21, 2013, but assignments may be due online after this date.

Catalog Title and Description: (CREDIT 2.0) *Applications of Actuarial Science* - Applications of actuarial science using mathematical and statistical methods to assess risk in the insurance and finance industries; emphasis on probability, statistics, finance, and economics; focus on using probabilistic models in the estimation of insurance premiums. Prerequisite: MATH 411 or STAT 414.

Course Objectives: The goal of this course is to prepare students for the Society of Actuaries Exam 1/P. Upon completion of this course, students will have gained a deeper understanding and practice in applications of probability, conditional probability and Bayes' Theorem, common discrete and continuous random variables, joint distributions, expectation, moment generating functions, and transformations and limits. Note: A tentative schedule for this course, including the topics to be reviewed, can be found at the end of this handout and on my web page.

Requirements: All students are required to have a TI-30XS Multiview calculator (no exceptions) and are required to purchase access to WebAssign to complete online homework for this class.

Although it is not required, all students registered for Math 419-500: Exam 1/P Section are encouraged to sit for the Society of Actuaries Exam P in November 2013 or January 2014. The registration deadline for the November exam is September 26, 2013, and the registration fee is $200. Under some circumstances, the Department of Mathematics will reimburse students for this fee. Details will be provided on the first day of class.

Recommended Texts: No specific textbook is required for this course, but I highly recommend the following as references:

Ross, Sheldon. *A First Course in Probability*, 5th edition (or higher).

Carr and Gauger. *BPP SOA Exam P/CAS Exam 1 Course Notes: Probability - An Introductory Guide for Actuaries and other Business Professionals*, 4th edition. BPP Professional Education. (This study manual can be purchased for $64 online at www.actuarialbookstore.com.)

Email Policy: Check your TAMU email account and WebAssign's announcement center regularly. You are responsible for any information I send via email or announcement. If you send an email to me, be sure to include your full name and Math 419 in the message.

Cell Phone/Laptop Computer Policy: As a courtesy to me and your classmates, all cell phones and laptop computers (and other electronic devices) must be OFF and put away during lecture. If you disrupt class or distract your neighbor with your cell phone or other electronic device, you will be asked to leave class.

Grading Policy: Grades will be calculated according to the following percentages:

Online Assignments	50%	A = 90-100%
In-class Quizzes	20%	B = 80-89%
In-class Practice Exams	20%	C = 70-79%
Class Participation/Attendance	10%	D = 60-69%
		F = below 60%

Online Assignments: All students will be required to purchase access to WebAssign for the completion of online homework assignments. Homework will usually be due on Sundays (see schedule for exact dates). There is no time limit for these assignments, and students will have two attempts for each question.

During the last two weeks of the course, students will complete four practice exams in WebAssign. Each will consist of 10 questions from previous actuarial exams, and there will be a 60-minute time limit. Only one attempt per question will be allowed.

In-class Quizzes: Announced and unannounced quizzes will be given throughout the semester during lecture. Each quiz will be cumulative, meaning that all material covered before the day of a quiz is fair game for that quiz.

In-class Practice Exams: During the last few weeks of the course, students will be given in-class practice exams that will consist of five or six questions to be completed in 30 or 36 minutes. Dates for these practice exams can be found on the tentative schedule posted on my website.

Class Participation and Attendance: One hundred points will be awarded for class participation and attendance, and the final score in this category will count as 10% of the overall course average. Attendance is mandatory, and the roll will be taken at each class period. Although missing class is highly discouraged, each student will be allowed one unexcused absence. Each additional unexcused absence will result in a 30-point deduction in the class participation grade. To receive full points for class participation, students are expected to attend class each day, take notes, practice using their calculators as the instructor goes through practice problems, and contribute to class discussion.

Make-up Policy: No make-ups will be given without written evidence of an official University excused absence. (See *University Student Rules*.) According to Section 7.3 of the *University Student Rules*, for an absence to be considered excused,

> the student must notify his or her instructor in writing (acknowledged e-mail message is acceptable) prior to the date of absence if such notification is feasible. In cases where advance notification is not feasible (e.g. accident or emergency) the student must provide notification by the end of the second working day after the absence. This notification should include an explanation of why notice could not be sent prior to the class.

If no such notice is given, the rights to a make-up are forfeited. In addition (and also in accordance with *University Student Rules*), a **written** excuse must be presented upon return to class. Specifically, in the

case of illness or injury, students are required to obtain a confirmation note from a health care professional affirming date and time of a medical office visit regarding the illness or injury. I will NOT accept the Explanatory Statement for Absence from Class form as sufficient written documentation of an excused absence.

Scholastic Dishonesty: You are encouraged to work together on the homework assignments, but do not copy another student's work or allow another student to complete your homework assignments for you. Always abide by the Aggie Code of Honor: *An Aggie does not lie, cheat, or steal or tolerate those who do.* Please refer to Honor Council Rules and Procedures at http://www.tamu.edu/aggiehonor for more information on academic integrity and scholastic dishonesty. **I have served as a member of the Aggie Honor Council, so I take these matters very seriously.**

Extra Help:

- **Your Instructor:** I want each and every one of my students to be successful in this class and to pass Exam 1/P. Please feel free to ask questions in class. If you need more help, come by my office during office hours or make an appointment to see me. Remember, I am here to help, but I cannot do that if I don't know that there is a problem.
- **Your Classmates:** Get to know your classmates. Form study groups and/or utilize the discussion board within WebAssign to help each other out on the homework assignments.
- **Practice:** The best way to prepare for an actuarial exam is to practice, practice, practice, and then practice some more. I strongly recommend that you practice problems **DAILY**. If you find that you struggle with certain problems the first time you work them, be sure to work them again AND work other problems that are similar. A set of over 150 practice problems can be found online at beanactuary.org, and for those who are looking for even more practice problems, you can purchase the *ASM Study Manual for Exam 1/Exam P*, 15th ed., at http://www.actexmadriver.com/, although this is not strictly necessary.

ADA Policy Statement: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Room B118 of the Cain Hall or call 845-1637.

Weekly Lecture Schedule: Roughly speaking, we should review the following material on the following schedule:

Week of Tuesday	Topics
Aug. 27	Probability & Conditional Probability
Sept. 3	Random Variables
Sept. 10	Common Discrete Random Variables
Sept. 17	Continuous Random Variables
Sept. 24	Common Continuous Random Variables
Oct. 1	Joint Distributions
Oct. 8	Expectation
Oct. 15	Moment Generating Functions
Oct. 22	Transformations and Limits
Oct. 29	Order Statistics
Nov. 5	Practice Exams 1 and 2
Nov. 12	Practice Exams 3 and 4
Nov. 19	Practice Exam 5
Nov. 1-12	Exam 1/P (Preferrably Nov. 9-12)