



Updated Syllabus Information:

- Homework/Quizzes will still make up 50% of your grade
  - Some assignments will be in GOAL, others in WebAssign
- Participation will be moved up to 20%
  - Everyone had a perfect participation up to this point, and the remaining portion of the participation grade will now be based on completion of online assignments.
- Exams will be moved down to 30%
  - Exams 2 and 3 are cancelled
  - We will have a final exam for 1/3 of this category
  - This final exam will occur at 8:00am on Monday, May 4
  - If this time is an issue for you for any reason, please let me know as soon as possible
  - Additionally, there are four short practice exams programmed into Webassign. I will average your best two, and that will count for 1/3 of your exams category
- I will continue to upload notes on my webpage.
  - There will hopefully be one new set of notes each M/W/F for the remainder of the semester
  - I intend to elaborate more in the explanation portion of the notes since I won't be lecturing the material
- I will attempt to make videos of me working out the questions from the notes, but at the very least I will post solutions for the questions in the notes.
- Updated Zoom office hours are posted on my webpage. Links to those hours in ecampus.

## INSTRUCTOR INFORMATION

<b>Name</b>	<b>Todd Schrader</b>
<b>Office</b>	Blocker 247F
<b>Phone number</b>	Math Department: 979-845-3261
<b>E-mail</b>	todd.schrader@math.tamu.edu
<b>Course Page</b>	<a href="http://www.math.tamu.edu/~todd.schrader/Math419_2019a.html">http://www.math.tamu.edu/~todd.schrader/Math419_2019a.html</a>
<b>Office hours</b>	Monday/Wednesday 3:00-4:00pm in <b>BLOC 246</b> Tuesday/Thursday 2:15-4:00pm in <b>BLOC 246</b>

## CLASS TIMES

- 419-500: MWF 10:20-11:10am BLOC 160

## CATALOG DESCRIPTION

*Applications of Actuarial Science*. (2-0). Credit 2. 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 or approval of math advisor.

## LEARNING OUTCOMES

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 of 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 the course webpage.

## 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 are encouraged to sit for the Society of Actuaries Exam P in May 2020 or July 2020. The registration deadline for the May exam is April 14, 2020, and the registration fee is \$225.

## 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](http://www.actuarialbookstore.com).)

## EMAIL POLICY

Check your TAMU email account 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. (I am also teaching Math 152, so it helps me to know which class you are emailing me about.)

## COMPUTER/ELECTRONICS POLICY

As a courtesy to me and your classmates, all cell phones, 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.

## EXAMS

There will be three in-class exams. Each exam will be cumulative and will consist of 8 multiple choice questions. No partial credit will be given. You will have 50 minutes to complete each exam. The tentative exam schedule is as follows:

**Exam 1:** Friday, February 14, 2020

**Exam 2:** Friday, March 27, 2020

**Exam 3:** Friday, April 24, 2020

There will be no final exam for this class.

## HOMEWORK & QUIZZES

All students will be required to purchase access to WebAssign for the completion of online homework assignments. Homework will usually be due on Thursdays (see schedule in WebAssign 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.

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. Quizzes will be all multiple choice, and you will be given 6 minutes per problem.

## CLASS PARTICIPATION & 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.

## GRADING POLICIES

**A** (90-100%), **B** (80-89%), **C** (70-79%), **D** (60-69%), **F** (0-59%)

Activity	Date	Percentage
Exams	See Above	40%
Homework & Quizzes	Weekly	50%
Participation	Daily	10%
<b>TOTAL</b>		<b>100%</b>

Any questions concerning the grading of homework or an exam must be presented to me within one week of the return of the assignment. Otherwise the grade will not be changed. I will be posting grades during the semester on eCampus. Please go to <http://ecampus.tamu.edu> to login.

## **ATTENDANCE AND MAKE-UP POLICIES**

Attendance is mandatory and, as described above, does affect your grade. No make-up homework assignments or exams will be given without an official, written, University Excuse (falsification of documentation is a violation of the Aggie Honor Code). You must notify me in advance to ensure the right to a make-up. If advance notice is not possible (i.e. sudden illness), you MUST contact me within TWO working days of the missed assignment/exam; otherwise, you forfeit the right to a make-up. An absence for a non-acute medical service or regular check-up does not constitute an excused absence. For more information please go to <http://student-rules.tamu.edu/rule07>. Please note that I will NOT accept the Explanatory Statement for Absence from Class form as sufficient written documentation of an excused absence.

If you have a University approved absence for missing an exam, you will be expected to make up your exam according to the Math Dept. Make-up Schedule that can be found at <http://www.math.tamu.edu/courses/makeupexams.html>, starting with the first option for each exam. Only if you have a University approved absence for the day of the exam and the previous makeup day will you be allowed to use the later options or have other arrangements made. You must discuss (email is fine) the need for a make-up exam with me before going to a scheduled time.

## **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://aggiehonor.tamu.edu> for more information on academic integrity and scholastic dishonesty.

## **EXTRA HELP**

- **Your Instructor:** I want each and every one of my students to be successful in this class and to pass Exam 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 or eCampus 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 and free timed computerized practice exams can be found online at [soa.org](http://soa.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.actexamdriver.com/>, although this is not strictly necessary.

## **AMERICANS WITH DISABILITIES ACT (ADA)**

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 Disability Services, currently located in the Disability Services Building at the Student Services at White Creek complex on West Campus, or call 979-845-1637. For additional information, please visit <http://disability.tamu.edu>.

## ACADEMIC INTEGRITY

"An Aggie does not lie, cheat, or steal, or tolerate those who do." Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. For additional information, please visit <http://aggiehonor.tamu.edu/>.

Storing formulas or unauthorized programs in your calculator is also an act of scholastic dishonesty and will not be tolerated. Using or having an unapproved program or any formulas stored in your calculator during an exam will result in a zero on the exam. Also, sharing calculators during an exam will result in a grade of zero for all parties involved.

***Having a cell phone out during any graded assignment will result in an automatic zero, and you will be reported to the Aggie Honor Office for academic dishonesty.***

## COPYRIGHT POLICY

All printed materials distributed in class or on the web are protected by copyright laws. One copy (or download from the web) is allowed for personal use. Multiple copies or sale of any of these materials is strictly prohibited.

## TENTATIVE WEEKLY SCHEDULE FOR MATH 419

WEEK OF	TOPIC
1/13	Sets, Combinatorics, Conditional Probability
1/20	Bayes' Theorem, Random Variables
1/27	Conditional Probability for RVs, Mean, Variance and Moments
2/3	Percentiles, Mode, Joint Distributions
2/10	Review, Exam 1
2/17	Uniform Distribution, Marginal Distributions
2/24	Joint Moments, Covariance, Conditional Distributions, Conditional Moments
3/2	Double Expectation Formulas, Binomial Distribution, Negative Binomial Distribution
3/16	Poisson, Exponential, Normal
3/23	Review, Exam 2
3/31	Bivariate Normal, Central Limit Theorem, Order Statistics
4/6	Moment Generating Functions, Probability Generating Functions
4/13	Transformations, Transformations of Two or More Variables
4/20	Review, Exam 3

## **TITLE IX AND STATEMENT ON LIMITS TO CONFIDENTIALITY**

Texas A&M University and the College of Science are committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws provide guidance for achieving such an environment. Although class materials are generally considered confidential pursuant to student record policies and laws, University employees — including instructors — cannot maintain confidentiality when it conflicts with their responsibility to report certain issues that jeopardize the health and safety of our community. As the instructor, I must report (per Texas A&M System Regulation 08.01.01) the following information to other University offices if you share it with me, even if you do not want the disclosed information to be shared:

- Allegations of sexual assault, sexual discrimination, or sexual harassment when they involve TAMU students, faculty, or staff, or third parties visiting campus.

These reports may trigger contact from a campus official who will want to talk with you about the incident that you have shared. In many cases, it will be your decision whether or not you wish to speak with that individual. If you would like to talk about these events in a more confidential setting, you are encouraged to make an appointment with the Counseling and Psychological Services (<https://caps.tamu.edu/>).

Students and faculty can report non-emergency behavior that causes them to be concerned at <http://tellsomebody.tamu.edu>.