

Math 477-01 (8:00 - 9:40 TR Roberts 001B)
Problem Solving in Probability
Spring 2009

Instructor: Dr. Lori Koban

Office: Brinkman 204

Phone: 778-7952

E-mail: lori.koban@maine.edu

Webpage: <http://faculty.umf.maine.edu/~kobanl>

Office Hours: I will be in my office **MWF 2:30 - 3:30** and **TR 9:30 - 10:30**. Please feel free to make an appointment for another time.

Course Description: In this course we will apply probability theory to problems that arise in the Actuarial Sciences. A variety of Calculus and Statistics topics will naturally arise when solving problems. One outcome of the course is that students will be prepared to take the first Actuarial Exam, Exam P/1. We will also develop tools, such as VBA programming, that are desired of students entering the Actuarial career.

This course is NOT only for students interested in the Actuarial career. It is an excellent capstone course that combines the material learned in many individual mathematics classes so that problems involving risk can be solved. Also, the programming component of the course will benefit anyone.

Prerequisites: MAT371 and MAT142

Required Text:

- Miguel Arcones, *Arcones Manual for the SOA Exam P/CAS Exam 1*, Spring 2009 Edition.

Materials:

- You need to bring a calculator to EVERY class. If you plan on taking Exam P/1, I recommend the TI 30X IIS.
- You need to bring your text and homework to each class.

Course Description: We will cover the entire text.

Exam P Deadlines: It costs \$175 to take Exam P/1.

- Register by April 11, 2009 for the May 12-21 Exam.
- Register by May 28, 2009 for the July 7-16 Exam.

A Typical Week:

Tuesday Classes	Thursday Classes
Present Class Problems from Chapter n	Last Quiz attempt for Chapter n must be done by 7:30 a.m.
Computer Labs	Written Problems for Chapter n are due Friday by 3 pm
Counting Drills	New material from Chapter $n + 1$

Grades: Your grades will be calculated in the following way:

Oral Final Exam	100 points
Book Corrections	50 points
Quizzes	140 points
Written Problems	100 points
Class Problems	100 points
Computer Labs	60 points
2 Programming Projects	100 points (50 points each)
Homework	0 explicit points

Oral Final Exam: You will take an hour-long final exam in my office during the week of final exams.

Book Correction: You are to read the book completely and record errors that you find. Focus on mathematical errors. (Overlook grammatical errors, unless they affect the meaning of the problem.) At the end of the semester we will give our Errata list to Dr. Arcones. A more specific breakdown on how the 50 points will be earned will be discussed mid-semester. One guarantee: if you find an error that I don't find, you will receive double credit for that error. It is fine to claim the error with someone if you find it when working together. To record an error:

- Go to docs.google.com
- Sign into your Google Account (create one if you don't have one)
- Go to a file called "Errata" at the address on my webpage. Here you can add any corrections to the book that you find.

Quizzes: The quizzes are located on Blackboard. There are twelve quizzes, each worth 12 points.

- You may not receive help from any person on quiz problems. You may use your text and notes.
- After you have completed the homework for Chapter n , take the quiz for Chapter n .
- Each quiz contains seven questions worth two points each. Theoretically you could get $14 \times 12 = 168$ quiz points.
- You are allowed to take each quiz as many times as you like. The questions are randomly taken from a database, so each quiz will most likely be different. Your grade on quiz n will be the average of all of your attempts on quiz n .

- You may take quiz n from the Thursday we discuss Chapter n in class until 7:30 a.m. on the following Thursday.

Written Problems: By Friday, 3 pm, you will hand in two well-written solutions to problems. Poorly written solutions will receive no credit.

- The problems must (if possible) be ones that you missed during your quiz attempts. (When you miss a quiz problem, I recommend that you cut-and-paste it into a document so you'll have it on file.)
- If you got all quiz problems correct, choose two interesting homework solutions to write-up. If you missed only one quiz problem, write that one up and then choose one interesting homework solution to write-up as well.

Class PROBLEM Presentations: On Tuesdays, you must be prepared to present a homework problem to the class that you found challenging. In particular, choose a problem for which you couldn't get the right answer. Each presentation is worth 15 points. Your grade will be the sum of your best 7 presentation scores. You will:

- Explain the problem (5 points)
- Show what you have tried and why you are stuck (5 points)
- Respond to classmates' suggestions on how to finish the problem (5 points)

In the case that you successfully completed all homework problems, be ready to present the one you found more interesting. You will:

- Explain the problem (5 points)
- Explain the particular challenges in the problem that may stump other students (5 points)
- Show the solution (5 points)

Computer Labs: These labs will occur on many Tuesdays and are designed to teach the computer skills necessary to complete the programming projects. Each lab is worth 10 points. Your best six labs will count towards your grade.

2 Programming Projects: You will be learning how to manipulate some Microsoft Office Programs (Excel, Access, PowerPoint) with Visual Basic for Applications (VBA).

- Project 1 will be distributed on February 12 and collected on March 5.
- Project 2 will be distributed on April 9 and collected on April 30.

Homework: Struggling with homework problems is the most important part of this course. I encourage you to work together on homework problems.

Course Grades: Here is how your percent of accumulated points will determine your grade.

- 90% - at least an A-
- 80% - at least a B-
- 70% - at least a C-
- 60% - at least a D-

Attendance: I expect you to attend every class. Missing even one class is unacceptable, unless you have a very good reason. Please come to class on time. Attendance will be taken at 8:00 sharp.

Cell Phones: Turn them off before class. The first time your cell phone makes noise in class, you get a warning. For each subsequent offense, I will deduct one letter grade from your next exam grade.

Students Needing Special Accommodation: Equal educational opportunity is offered to students with special needs due to disabilities. Please notify me if a reasonable accommodation is needed to meet course requirements.

Academic Honesty: If you cheat, you will receive an "F" in the course, and I will recommend that your cheating be brought to the attention of the Director of Student Judicial Affairs and the Dean of your College.