

# STAT 318 Elementary Probability

## Section 001

August 24, 2009 – December 11, 2009

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<b>Class:</b>	13:25 PM – 14:15 PM	MWF	133 Food Science
<b>Instructor:</b>	Artemiou Andreas	<b>TA:</b>	Xiaotian Zhu
Office	331A Thomas	Office	316 Thomas
Office Hours	F 11:15 – 13:15	Office Hours	R 3:00-4:00
Office Phone	863-1772	Office Phone	863-3238

**SPECIAL NOTE:** When you look for either me, you will see door 331. DO NOT KNOCK. Enter in there and then you will see three other doors. Look for the one which is label 331A .

It is easier to reach me by mail than on the phone above: [artemiou@psu.edu](mailto:artemiou@psu.edu) or through Angel.

### Course Material:

*Textbook:* **Modern Mathematical Statistics with Applications**, 1st Edition by Devore and Berk

*Slides:* I will upload course lectures (pdf files) on Angel at least the day before the lecture. You are responsible to print them and bring them to class. No need to review them before class, though. Slides will contain the most important material of the book. I expect that you will read the book in order to see more details and see more examples.

*Schedule:* The slides for each lecture will be informative of what you should read and which exercises you will be able to solve from the book. So if you miss a class, find the lecture slides in Angel. For further help, you are encouraged to come and find me.

*Calculator:* You will need a scientific calculator for this class.

### Prerequisites:

- Math 141

### Topics:

- Appropriately summarize data numerically and graphically
- Introduction to probability
- Introduction to random variables
- Discrete random distributions
- Continuous Random Distribution
- Joint Probability Distributions

### Academic Integrity:

All Penn State and Eberly College of Science policies regarding academic integrity apply to this course. See <http://www.science.psu.edu/academic/Integrity/index.html> for details.

### Goal:

*The purpose of this class is to introduce students into the basics of probability, data summaries and distribution theory. You will be introduced into a number of ways to summarize data, a number of distributions that describe data and the characteristics of those distributions.*

## Objectives:

By the end of the semester students are expected to:

- Demonstrate their ability to find summaries for data provided to them.
- Demonstrate their ability to use basic probability principles
- Be able to distinguish between discreet and continuous random variables.
- Be able to characterize distributions.
- Understand a problem, and be able to “decode” it, that is, transforming English language into statistical symbols.

All the above will be demonstrated through the various problems that we will discuss in class and the problems that will be given on the exams and the quizzes.

## Evaluation:

	Percent
Midterm 1 (September 25 <sup>th</sup> )	25%
Midterm 2 (November 13 <sup>th</sup> )	25%
Final (during finals week)	25%
Quizzes (Every Friday - Best 10)	25%
Total	100%

## Homework:

- Every lecture I will give you homework problems from the book. **You do not have to turn them in UNLESS I specifically ask for it.** It is for your pleasure and practice. ☺
- I suggest you to solve as many exercises as you can. (Probably solving 3 or 4 without any help should be ok, but if you see that you need to solve more to understand the material then there will be plenty available ☺).
- *Why is it a good idea to practice with them, if I am not going to grade them?* See Quizzes notes

## Quizzes:

- In class Quizzes will be given at the end of each FRIDAY lecture (10-20 minutes).
- We will have 13 Quizzes (assuming there is a quiz every Friday... and there will be one unless there is a physical disaster or other non-controllable by the instructor event ☺ ... In any way, there will be a quiz unless I send an email changing this rule).
- **I will count your best 10.**
- **No make up Quizzes will be given.**
- Quizzes will be based on the homework problems that were assigned on Monday's and Wednesday's lecture the week of the Quiz. (that's why is good to do homework ☺)
- Every week I will select from the homework exercises, 5 “special” exercises, which you will receive by email (and posted in Angel). You can submit as many of those 5 exercises as you want, on Friday at the **beginning of the lecture**. Each exercise will give you 1 extra point at the Quiz. Since those are extra credit exercises that are supposed to help you learn the stuff for the weekly Quiz, which means the deadline, is strictly set at the beginning of Friday's lecture. Not later, because there is no reason to do them later.

## Exams:

- **Midterm 1:** Chapters 1 and 2 (In class Friday September 25<sup>th</sup>)
- **Midterm 2:** Chapter 3 and 4 (In class Friday November 13<sup>th</sup>)
- **Final:** Chapters 1 through 5

### Makeup Policy:

- No make-up Quizzes will be given. If you miss one or two you probably won't have any problem since I will drop the worst grades
- If you must miss the Midterm or Final, speak to me BEFORE the date of the exam in order to set up a conflict exam time. Otherwise you will receive a zero for the missed exam.
- You **will not** be able to negotiate missed exams and quizzes at the end of the semester.
- Deferred grades will only be considered for legitimate extenuating circumstances that occur near the end of the semester.

### Some useful notes:

- Class attendance and participation is not graded, but it is greatly appreciated.
- No homework means the class goes at the bottom of the stack. The easiest way to avoid this is by forcing yourself to study at least **X** hours every week for the class. Set a day and time and consider it a date with your Stat 318 class.
- The value of **X** in the above phrase should be decided by each one of you, based on your needs. I expect that an AVERAGE student will need 3 to 4 hours of study per week.
- Try not to stay behind early. In this course everything is building on previous Chapters. You do not want to stay behind.
- Phrases students in previous classes used to describe their experience in the class:
  - *"The materials seem deceptively easy but they are not. Unfortunately, I realized this a little bit late"*, that's what someone told me last semester after almost failing the class
  - *"It might be the only C I will get throughout my college career, but I put such an effort on it that I can say, it is my proudest grade ever"*
- If you have a question, **don't be shy**. Everyone has weaknesses. If you don't expose them, and most critically, if you don't let me help you overcome those weaknesses, the whole class will be a bad experience for you.
- There is a solution manual for the odd number exercises in the book, which is sold in many bookstores. You do not have to buy it because through your tuition you have paid to have the best solution manual you can get, and it gets for "free" as a package with the class... This manual is... your instructor ☺
- I will try to be as helpful as I can during my office hours and lecture time. Unfortunately there are time constraints, though. If you need more help, through extra office hours, review sessions or however else is considered appropriate (*no I am not going to tell you what will be on the exams* ☺), you will have as much help as you want. The only condition is the following: **You need to ask for it**.
- Finally, if you have comments about my teaching, you can talk to me freely, or send me an email. If you don't want to address it directly to me you can put them in an envelope in my mailbox at 325 Thomas.

### Grading Scale:

93%	A
90%	A -
87%	B +
83%	B
80%	B -
77%	C +
70%	C
60%	D
Below 60%	F

***These are tentative and could be lowered depending on how final course scores turn out. However when I decide what the final boundaries will be (the decision will be taken after you final exam grades), then they are set and there will be no reason to change them.***

**Calendar:**

<b>Dates</b>	<b>Material</b>	<b>Notes</b>
08/24 – 01/28	Sections 1.1 – 1.2	Friday 01/28 Quiz #1
08/31 – 09/04	Sections 1.3 – 1.4	Friday 01/23 Quiz #2
09/07 – 09/11	Section 2.1	No class (Labour day) on Monday 09/07 Friday 09/11 Quiz #3
09/14 – 09/18	Sections 2.2 - 2.3	Friday 09/18 Quiz #4
09/21 – 09/25	Sections 2.4 - 2.5 and Review	Friday 09/25 Midterm #1 on Chapters 1 and 2
09/28 – 10/02	Sections 3.1 – 3.2	Friday 10/02 Quiz #5
10/05 – 10/09	Sections 3.3 – 3.4	Friday 10/09 Quiz #6
10/12 – 10/16	Sections 3.5 – 3.6	Friday 10/16 Quiz #7
10/19 – 10/23	Sections 3.7 and 4.1	Friday 10/23 Quiz #8
10/26 – 10/30	Sections 4.2 - 4.3	Friday 10/30 Quiz #9
11/02 – 11/06	Section 4.4 – 4.7	Friday 11/06 Quiz #10
11/09 – 11/13	Review	Friday 11/13 Midterm #2 on Chapters 3 and 4
11/16 – 11/20	Sections 5.1 – 5.2	Friday 11/20 Quiz #11
11/23 – 11/27	Thanksgiving break	No classes
11/30 – 12/04	Sections 5.3 – 5.4	Friday 12/04 Quiz #12
12/07 – 12/11	Sections 5.5 and Review	Friday 12/11 Quiz #13
05/04 – 05/08	Finals Exam Week	Final Exam on Chapters 1, 2, 3, 4, 5 Date to be announced