

Syllabus & Course Policies

Time & Location:

Lectures: MWF 1:00-1:50 PM, CB 214.

Instructor:

Lecturer: David Murrugarra, POT 771, (859) 257-4734, murrugarra@uky.edu.
Office hours: Mondays 10-11 AM, Tuesdays 3-4 PM, and by appointment.

Course Overview:

MA 320 is an introduction to probability and its applications. Prerequisites are the mathematical maturity represented by successful completion of two semesters of calculus or the completion of the first and concurrent enrollment in the second. The course covers topics in: Set theory; fundamental concepts of probability including conditional and marginal probability; random variables and probability distributions moments; moment-generating and characteristic functions; random experiments; distribution of random variables and functions of random variables; limit theorems; corresponding to selected sections in chapters 1-9 of the course text which is Introduction to Probability (second edition), American Mathematical Society, by Charles M. Grinstead and J. Laurie Snell.

Course Outline:

1. Chapter 1: Discrete Probability Distributions

Simulation of Discrete Probabilities.

Discrete Probability Distributions.

2. Chapter 2: Continuous Probability Densities

Simulation of Continuous Probabilities.

Continuous Density Functions.

3. Chapter 3: Combinatorics

Permutations.

Combinations.

4. Chapter 4: Conditional Probability

Discrete Conditional Probability.

Continuous Conditional Probability.

Paradoxes.

5. Chapter 5: Distributions and Densities

Important Distributions.

Important Densities.

6. Chapter 6: Expected Value and Variance

Expected Value.

Variance of Discrete Random Variables.

Continuous Random Variables.

7. Chapter 7: Sums of Random Variables

Sums of Discrete Random Variables.

Sums of Continuous Random Variables.

8. Chapter 8: Law of Large Numbers

Discrete Random Variables.

Continuous Random Variables.

9. Chapter 9: Central Limit Theorem

Bernoulli Trials.

Discrete Independent Trials.

Continuous Independent Trials.

Student Learning Outcomes:

After completing this course, students will be able to:

1. Understand the main concepts presented in the class.
2. Write correct justifications for their solutions to problems.
3. Apply the methods of probability in new contexts to solve unfamiliar problems.

Grading:

You will be able to obtain a maximum of 500 points in this class, divided as follows:

	Points	Percentage of final grade
Online Homework	80 points	16%
Quizzes/Attendance	120 points	24%
First Exam	100 points	20%
Second Exam	100 points	20%
Final Exam	100 points	20%

Your final grade for the course will be based on the total points you have earned as follows:

	Points	Percentage
A	450 - 500 points	90 - 100 %
B	400 - 449 points	80 - 89.9 %
C	350 - 399 points	70 - 79.9 %
D	300 - 349 points	60 - 69.9 %
E	0 - 299 points	0 - 59.9 %

The grading scale might be adjusted at the end of the semester. You will be guaranteed the above letter grade if your score falls within the given range, but the minimum score for each letter grade might be lowered.

Mid-term grades will be posted in myUK by the deadline established in the [Academic Calendar](#).

Policies:

Attendance in MA 320-001 is mandatory. Be on time and remain until dismissed. Do not leave in the middle of class. Whenever possible, please notify your instructor of absences prior to class.

S.R. 5.2.4.2 defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit "reasonable cause for nonattendance" by the professor.

You may be asked to verify absences in order for them to be considered excused. Senate Rule 5.2.4.2 states that faculty have the right to request *appropriate verification* when students claim an excused absence because of illness or death in the family. Appropriate notification of absences due to university-related trips is required prior to the absence.

If you anticipate an absence for a major religious holiday please notify your instructor (in writing) of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Two weeks prior to the absence is reasonable, but should not be given any later. Information regarding major religious holidays may be obtained through the Ombud (859) 257-3737, http://www.uky.edu/Ombud/ForStudents_ExcusedAbsences.php.

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused or unexcused) per university policy.

Classroom behavior:

Electronic devices such as mobile phones, laptops and tablets should be put away or used only as part of class activities during lectures and recitations. Mobile phones, laptops, and computers may not be used during exams.

Make-up policies:

Per Senate Rule 5.2.4.2, if you are missing any graded work due to an excused absence you are responsible for informing the Instructor about your excused absence within one week following the period of the excused absence (except where prior notification is required); and for making up the missed work. The instructor will give you an opportunity to make up the work and/or the exams missed due to an excused absence, and shall do so, if feasible, during the semester in which the absence occurred. In particular, if you have university excused absences or have university-scheduled class conflicts with uniform examinations you may arrange with their instructor to take the exam at an alternate time. Generally these make-up exams will be scheduled on the day of or on the day after the regularly scheduled exam. Work-related conflicts are neither university excused absences nor university-scheduled absences.

Students needing accommodations:

If you have a documented disability that requires academic accommodations, please see your instructor as soon as possible. In order to receive accommodations in this course, you must provide your instructor with a Letter of Accommodation from the Disability Resource Center (DRC). The DRC is located at Suite 407 of the Multidisciplinary Science Building, 725 Rose Street, 0082). Contact David T. Beach, dtbeac1@uky.edu for coordination of campus disability services.

Accommodations for victims of violence:

By federal law, any student who is a victim of dating violence, domestic/intimate partner violence, sexual assault, or stalking (whether on or off campus) is entitled to appropriate accommodations for his or her coursework. To get help getting accommodations and other support, students who are assaulted can do any of the following:

1. Tell your instructor who can assist you in accessing resources appropriate to your situation;
2. Call the UK VIP Center (Violence Intervention and Prevention Center) at 257-3574 or vipcenter@uky.edu or http://www.uky.edu/StudentAffairs/VIPCenter/about_contact.php; or walk in to the Center in Frazee Hall, lower level, between 8:30 and 5:00;
3. Call the University Counseling Center at 257-8701; 2nd floor, Frazee Hall;
4. Call Ms. Patty Bender from the UK Institutional Equity and Equal Opportunity at 257-8927 or patty.bender@uky.edu;
5. In the case of an emergency, contact the UK Police Department at 911.
6. Students may also contact community resources 24-hours a day, including:
 - a. Bluegrass Rape Crisis Center at 800.656.4673 or <http://bluegrassrapecrisis.org/>.
 - b. Greenhouse17 (formerly Bluegrass Domestic Violence Program) at 800.544.2022 or <http://greenhouse17.org/>.

Academic Honesty:

Cheating or plagiarism is a serious offense and will not be tolerated. It will be thoroughly investigated, and might lead to failure in the course or even to expulsion from the university. See

<http://www.uky.edu/StudentAffairs/Code/part2.html>

(Sections 6.3.1 and 6.3.2) for information on cheating, plagiarism, and penalties.

A summary of recent changes to rules on cheating can be found at the Academic Ombud website:

<http://www.uky.edu/Ombud>