



M241 Probability Semester 011 Course Syllabus

Instructor: Karen E. Donnelly. **Office:** Core 257

Office Phone: 6297 **Home Phone:** 866-8997 email alias karend

Office Hours:

Monday 2:00 -- 4:00 p.m.
Tuesday 9:00 -- 11:00 a.m.
Wednesday 10:00 -- 10:50 a.m.
Thursday 9:00 -- 11:00 a.m.

If you need to see me outside of these office hours, contact for an appointment.

Home page URL: www.saintjoe.edu/~karend

Probability Course Web Page URL: www.saintjoe.edu/~karend/m241

Text: Pitman, Jim, *Probability*, 1st ed, © 1993 Springer-Verlag. ISBN 0-387-97974-3

Some outside readings may also be assigned.

Course Objectives:

1. To master basic concepts in probability theory, including discrete and continuous random variables and their distributions, density functions, expectations, mean, and variance.
2. To investigate important specific discrete and continuous distributions.
3. To understand basic sampling distribution theory and implications of the Central Limit Theorem.
4. To continue to develop mathematical problem-solving skills and to apply these skills to the solving of application problems in probability.
5. To continue to develop the ability to communicate mathematics effectively.

Course Outline:

1. Introductory concepts in set theory and probability (Chapter 1)
2. Repeated Trials and Sampling (Binomial distribution, Normal and Poisson approximation, Random Sampling) (Chapter 2)
3. Random Variables (Random variables, expectation, variance, certain discrete distributions, fundamental limit theorems) (Chapter 3)
4. Continuous Random Variables (Probability densities, expectation, variance, important continuous distributions (Chapter 4)
5. Joint Distributions (Joint distribution functions, independent random variables) (Chapter 5)
6. Dependence (Conditional distributions and expectations, covariance, correlation) (Chapter 6)
7. Limit Theorems (Chebyshev's Inequality, Weak Law of Large Numbers, Central Limit Theorem, Strong Law of Large Numbers, Error Bounds.)

Tentative Exam Dates:

Exam # 1: Sept. 21st

Exam # 2: Oct. 19th

Exam # 3: Nov 16th

Final Exam: during final exam week

Grade Distribution:

Assignments, Quizzes:	35%
Three Exams:	40%
Final Exam:	20%
Attendance and Participation:	05%

Grading Scale:

93%-100%	A	90%-92%	A-		
87%-89%	B+	83%-86%	B	80%-82%	B-
77%-79%	C +	73%-76%	C	70%-72%	C-
67%-69%	D+	60%-66%	D		
59% or Below	F				

Expectations and Requirements:

Special Note: If you are a student with a disability, please meet with me immediately to discuss the accommodations you will need during class activity, examinations, and out of class assignments in order to participate fully and demonstrate your abilities.

1. Academic Honesty: Plagiarism or other forms of academic dishonesty on any assignments, tests, or quizzes will not be tolerated. If the instructor finds that a student has engaged in dishonesty, the student may be referred to the Dean of Academic Affairs for appropriate action.

2. Quizzes and Exams: Students are expected to be present for all exams. **No exams or quizzes may be made up** unless the student has contacted the instructor and received permission **prior** to the date of the original exam or quiz. This includes students participating in athletics who must arrange to take the quiz or exam on or before the scheduled date.

3. Assignments: Assignments, unless otherwise specified by the instructor, are to be completed individually. While students are encouraged to **consult** each other for ideas for assignments, the solutions should be completed individually. Any help one student gives another should be instructional help only. If the instructor feels that a student has not completed an assignment individually, the instructor may question the student on that assignment. The student should be able to explain how he/she worked the problem and should be able to work similar problems.

Late assignments will not be accepted without permission. In such cases an appropriate late penalty will be assigned. For problem assignments, write out complete answers NEATLY and CLEARLY. You must show your work! Partial credit is given when work is shown even if answer is incorrect. However, correct answers without any work shown will in general be given no credit. Start homework early and see me for help with problems you don't know how to work! It is inappropriate to ask how to do a problem in class the day it is due!!!! Staple your pages together before submitting.

4. Class Preparation and Participation:

a) **Keep up with reading assignments.** To receive the maximum grade on attendance and participation the student must read assignments **prior** to class and be prepared to ask questions and participate in discussions.

b) Take good notes and **review notes** on a regular basis as well as promptly begin and continue work on assignments as they are assigned.

c) **Attendance is required.** If you must miss class due to illness or other valid excuse (e.g. athletic event) please send me email or telephone with an explanation.

5. Getting Help:

Students who do not understand a concept should do the following:

a) Ask questions in class. (More than likely other students do not understand as well.)

b) Seek individual help from the instructor. I am more than willing to give you the extra help you may need. Come in during office hours or make an appointment. Tutoring (free) can also be arranged.

c) Share with me any concerns you may have or any suggestions you have for the class structure that will help you learn more effectively.

The above content and requirements are tentative and subject to change according to time constraints and other factors as determined by the instructor.