Lectures: Tuesday, Thursday from 6:00pm - 9:15pm.

Instructor: Stella Gastineau

Office: Maloney 534

Email: gastines@bc.edu

Office Hours: Tuesdays 3:00pm-6:00pm


Course Content: Sets, Venn diagrams, and counting techniques; experiments, outcomes, and events; calculating probabilities of events; Bayes’ Theorem; probability distributions; mean, variance, and standard deviation.

Course Objectives: Students will learn to take concepts and examples presented in the classroom and expand upon them, by solving problems in groups in class, working individually on homework assignments, and ultimately applying the methods used in class to analyze the world around them. You will refine your reading and critical thinking skills by translating from real-world problems to mathematical problems, and thereby be able to solve these problems using mathematics.

About the Course: Probability is the mathematics of uncertainty. The title of this course, *Finite Probability* refers to situations in which only a finite number of different outcomes can occur. In order to understand and analyze these situations, we first need to be able to determine the number of different outcomes, and this sort of counting (called enumeration) is the subject of most of Chapter 5. The heart of the course is Chapter 6, which covers the basics
of finite probability. Finally, in Chapter 7, we relate the probability we have learned from the previous chapter to the subject of statistics, which is the study of methods for describing and interpreting data.

Expectations: How does this course compare to other BC math courses? In one sense, it is the easiest math core course since the technical math skills needed (e.g., solving equations, simplifying polynomials, slopes of lines, etc.) are quite minimal. On the other hand, most of the work involves so-called story or word problems which must be read and understood before trying to solve them. You will need to use your reading, critical thinking, and creative problem solving skills in order to solve these problems. So in another sense, this course can be conceptually challenging since much of it cannot be reduced to a sequence of automatic steps. In short, the ideas and calculations are simple, but their specific applications can be subtle.

In order to be successful in any mathematics course, you must do more than reproduce what was told to you in the classroom. You must acquire a command and understanding of the material, so that you can apply what you have learned to new situations and feel more comfortable solving mathematical problems. It is your responsibility to learn the material. Most mathematics learning takes place outside the classroom, which means that in order to learn, you must do homework and additional problems. Work with other students if you prefer, or work alone, but remember that you will be by yourself on exam days. You should not expect to walk out of lecture with a full understanding of the material. That will require your time and energy outside of class.

The instructor’s job is to provide a framework, with some of the particulars, to guide you in doing your learning outside of class. The goal is not to program you with isolated facts or with step-by-step methods for doing specific types of exam problems. Any rote practice will be confined to homework, not class. You are expected to read the textbook. It is very readable. However, it is not a novel. It must be read slowly, with pencil, paper, and calculator at hand. Work through the examples and try to fill in any omitted steps. Read each section before the class involving that section. The fast-paced lectures will make much more sense if you have absorbed some of the content upon a first reading. After the class, go back and re-read the relevant material, comparing it to your notes from class, before attempting any assignments. You are responsible for all details covered in the text, unless specifically told otherwise.

Policies

Attendance: You are expected to attend all class meetings. Arrive on time. If you must leave early, please do it quietly so as to cause as little disturbance to the class as possible when you leave. If you miss a class, you should read the section in the book from the day you missed, get notes from a classmate, practice a few problems, either on MyMathLab or from the textbook, and if needed feel free to come to office hours and ask questions.
Exam Make Ups: Make up exams are not given under any circumstances. If you miss an exam, you will receive a score of zero that will be replaced by the average of the other two midterms. If you miss two or more exams, you must withdraw from the course.

Confidentiality: The Family Educational Rights and Privacy Act (FERPA) prohibits instructors from sharing any information about your grades, with the exception of specific instances. See [http://www.ed.gov](http://www.ed.gov) for complete details. In particular, educational information cannot be shared with a parent or guardian of a student attending a school beyond the high school level without explicit permission in writing from the student. Except in cases of health or safety emergencies, I will not communicate with any parent or guardian about grades or attendance. Such emergencies should first be relayed through your advisor or the Dean’s office.

Academic Integrity: Any work with your name on it is presumed to be your own and not copied from a classmate, the internet, or a textbook. Copying solutions from either the textbook or a classmate and submitting them as your own is plagiarism and is an infringement of the Academic Integrity Policy. Likewise, allowing another student to copy your solutions is an infringement of the Academic Integrity Policy. Any infringement of the Academic Integrity Policy is taken very seriously and reported to the Dean. You can read more about the policy at [http://www.bc.edu/integrity](http://www.bc.edu/integrity). See the section on Homework Collaboration below for a discussion of appropriate collaboration. If you have questions about what constitutes appropriate collaboration, please come talk to me.

Disabilities: If you are a student with a documented disability seeking reasonable accommodations in this course, please contact Kathy Duggan, 617-552-8093, [dugganka@bc.edu](mailto:dugganka@bc.edu), at the Connors Family Learning Center regarding learning disabilities and ADHD, or Paulette Durrett, 617-552-3470, [paulette.durrett@bc.edu](mailto:paulette.durrett@bc.edu), in the Disability Services Office regarding all other types of disabilities, including temporary disabilities. Advance notice and appropriate documentation are required for accommodations. Students are responsible for arranging accommodations before each midterm exam and the final exam.

Resources

Canvas: All supplementary documents, assignments, and official communication are posted on Canvas. Log in to Canvas by visiting [bostoncollege.instructure.com](http://bostoncollege.instructure.com) or from the, My Courses section of the BC Portal. Use your Boston College username and password. Through Canvas you can view course announcements, updated versions of this syllabus, the course schedule, assignments, and solutions to homework and exams. You are responsible for checking Canvas regularly for due dates and updates to assignments and the course schedule.
MyMathLab: You are required to purchase access to MyMathLab to have access to homework problems, review material, and study guides. MyMathLab includes an eBook, so you do not need to purchase a physical copy of the book if you would rather not. If you buy a new copy of the book, it comes with an access code for MyMathLab. Otherwise you can purchase access directly through Pearson’s website after registering. See additional handout (to be handed out) for step-by-step instructions on how to gain access to MyMathLab and be officially registered for the course. PLEASE COMPLETE THE INSTRUCTIONS ON THE HANDOUT BY JANUARY 25TH, 2017.

Office Hours: The best place to get one-on-one help is office hours. You do not need an appointment to attend office hours. If you wish to come by my office outside of office hours, I strongly recommend scheduling an appointment. Please think about what questions or topics you wish to discuss ahead of time. You should have already read the pertinent section of the textbook, reviewed notes from class, and attempted any problems before coming to office hours. This is not time for you to sit in my office and do your homework. Usually, office hours are first-come, first-served, however I will try to accommodate students with time constraints first. If you are in a hurry and there are a lot of students present, please let me know and I will make sure your questions are answered before you need to leave.

Coursework and Exams

As mentioned above, most mathematical learning occurs outside the classroom. The only way to learn mathematics is to solve problems. You will have two different types of assignments: online homework on MyMathLab (see registration details above) and written Problem Sets. There will be three in-class midterm exams and a cumulative final exam.

Grading Policy: The weighting scheme below will be used to determine your course grade:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weighting</th>
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<tbody>
<tr>
<td>Online Homework (MyMathLab)</td>
<td>30%</td>
</tr>
<tr>
<td>Midterm Exams (each)</td>
<td>$3 \times (15%)$</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
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If you miss an exam, you will receive a score of zero that will be replaced by the average of the other two mid-terms. If you miss two or more exams, you must withdraw from the course. No extra credit will be given under any circumstances except as necessitated by family or medical emergency. Such emergencies must be communicated to me in writing by the dean. No special accommodations will be given to any student except those specified by the Connors Family Learning Center or the Disability Services Office (see Disabilities above).
**MyMathLab:** There will be problems assigned for each section covered in the textbook, with some sections broken into part a and part b. Solutions and help tips are available through MyMathLab. You will have unlimited attempts on each problem and each section’s problems will be due two class meetings after we complete the section. The purpose of these problems is to give you unlimited practice where you will receive immediate feedback about whether your answer is correct. There are (optional) sets of review problems to use as additional practice before exams. Online homework will account for 30% of your grade.

**Assessment**

The majority (70%) of your grade is determined by in-class exams. You may use a scientific or graphing calculator on all exams, though you may be required to explicitly show work that your calculator can do for you. Cell phones, tablets, and computers are not allowed as calculators.

**Important:** If you are ever suddenly too unwell to take an exam, email me immediately to say that you will not be there (you need not include any details) and go to Health Services or Counseling Services (if you are unwell enough to miss an exam, you are unwell enough to seek help). It is best to cc your dean or advisor on such an email. Once you begin an exam, you may not be excused. Your score will be recorded if you sat the exam, even if you feel that you did not perform to the best of your abilities. Students missing more than one exam should withdraw from the course.

**Midterm Exams:** There will be three in-class midterm exams. You may use a scientific or graphing calculator. An absence from an exam will earn a zero; no make-up exam will be given. Midterm exams will occur on the following dates:

<table>
<thead>
<tr>
<th>Exam</th>
<th>Day</th>
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<tbody>
<tr>
<td>Midterm Exam 1</td>
<td>TBD</td>
</tr>
<tr>
<td>Midterm Exam 2</td>
<td>TBD</td>
</tr>
<tr>
<td>Midterm Exam 3</td>
<td>TBD</td>
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</table>

Either each midterm exam will account for 15% of your grade, or your final exam will replace your lowest exam score, depending on which grading scheme gives you a higher overall score.

**Cumulative Final Exam:** Final exams are scheduled by the Registrar at a specific time and cannot be changed. It is your responsibility to make sure that personal travel plans do not conflict with exam dates. If you wish to take the final exam at a different time than that listed for your section, I will require you to get permission from your dean. You are allowed to bring an 8.5x11” sheet of prepared notes and your scientific calculator. Your final exam is on the following day: TBD. Your final exam will account for 25% of your grade.