EC 151.06 and EC 151.07
Statistics

Syllabus

Instructor: Chuanliang Jiang
Office: 21 Campanella Way 462D
Office Hours: Friday 1.00-3.00 pm or by appointment
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Location: Carney Hall 303

Time: MTH 6:30pm for EC151.06
MTH 8:00pm for EC151.07

Text:


Course Grading and Policy:

Homework: 10%  Midterm1 : 30%  Midterm2 : 30%  Final Exam: 30%

There are three exams to be offered (schedule to be announced) in this semester, which cover different parts of textbook without overlapping. You are expected to attend all three exams without exception. There will be no make-up exams in any situation. This policy will be held fairly for the whole semester without exception.

You are responsible to submit homework every other week. The homework will not be graded, however, solution will be available the next day after submission. Undoubtedly the homework will help you capture the essential points we discuss in the class, and provide you good exercise to prepare for the exams.

Course Structure and Objective:

This course is designed to provide an introduction to the basic level of statistic analysis. It will explore the essential tools of statistics theory and show you how to apply these tools to the analysis of practical problem. We will study the description of data in graphical and numerical ways, the probability theory and probability distribution in discrete and continuous random variables. Some well-known distribution functions, such as Binomial, Possion and Normal distribution will be discussed in detail. We will also discuss how to make statistical inference from hypothesis testing, how to capture quantitatively the relationship between two random variables. Some assigned problems will be discussed
deeply as well in the class which will expose you directly to the statistics application.

At the end of this course, you are expected to get a basic idea about how to extract the analytic information from some "raw" data set and make some conclusion in the sense of statistician view. I hope this course will open the door for you to the further study of statistics or its application in your future career or research. Prior knowledge in mathematics is not required although some algebraic computation may be employed. Mathematical tools are introduced whenever they are needed. The textbook (PWB) contains well prepared exercises after the discussion of each topic. These exercises provide a good sample for Midterm and Final Exam. Most of homework questions will come from the textbook. Note that we will cover a fair amount of material in a very limited amount of time. Reading every chapter carefully covering the topics discussed in the class is highly recommended. The assigned homework questions will help you review essential points of each topic and ensure you to keep up with the materials covered in the class.

Both midterm and final exam are close-book exams. However, a calculator will be allowed to use. Be sure to familiarize yourself with Boston College’s academic integrity policy at http://www.bc.edu/offices/stserv/academic/resources/policy/#integrity.

Schedule of Topics

<table>
<thead>
<tr>
<th>Topic</th>
<th>Chap in text</th>
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<tbody>
<tr>
<td>1. Descriptive Statistics</td>
<td>Chapter 2,3</td>
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<tr>
<td>2. Probability Theory</td>
<td>Chapter 4</td>
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<tr>
<td>3. Probability Distribution (Continuous &amp; Discrete) Binomial, Poisson, Normal</td>
<td>Chapter 5,6</td>
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<tr>
<td>4. Sampling and Sampling distributions</td>
<td>Chapter 7,8</td>
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<tr>
<td>Conf. intervals</td>
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<td>Student t Distribution</td>
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<td>5. Hypothesis Testing</td>
<td>Chapter 10</td>
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<tr>
<td>6. Simple Regression</td>
<td>Chapter 12</td>
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If time allows, we will discuss the additional topic such as:

7. Analysis of Variance                          | Chapter 17   |

The schedule of topics and the construct of course may be subject to mild adjustment during the semester, depending on how far we have proceeded in the class.