EC 151.04 and EC151.05
Statistics

Syllabus

Instructor: Wei Zhang
Office: 21 Campanella Way Room 462D
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Location: Campion 236

Time: MWF 10:00am for EC151.04
      MWF 11:00am for EC151.05

Textbook:

Paul Newbold, Willian L, Carlson and Betty Throne:

Lecture:

There are three lectures per week. It is highly recommended that you should attend all of lectures discussion. Text reading for each lecture is strongly encouraged. I will try to put lecture outlines for each section on WebCT/Blackboard Vista as I figure it out.

Course Grading:

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

Exams:

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. Generally speaking, There will be no make-up exams. I will keep this policy for the whole semester without exception.

Both midterm and final exams are close-book exams. However, a calculator and a piece of paper with formulas on 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.
Homework

There will be five homework. 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 that we discuss in the class, which will provide you a 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 in the context of business and economics 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.
## Schedule of Topics

<table>
<thead>
<tr>
<th>Topics</th>
<th>Text Assignment</th>
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<tbody>
<tr>
<td>1 Descriptive Statistics I</td>
<td>Ch.1(1.1-1.7)</td>
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<tr>
<td>2 Descriptive Statistics II</td>
<td>Ch.2(2.1-2.4)</td>
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<tr>
<td>3 Probability Theory</td>
<td>Ch.3(3.1-3.5)</td>
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<tr>
<td>4 Discrete Random Variables &amp; Probability Distribution</td>
<td>Ch.4(4.1-4.4) (4.6-4.7)</td>
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<tr>
<td>5 Continuous Random Variables &amp; Probability Distribution</td>
<td>Ch.5(5.1-5.4)</td>
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**Midterm I  Monday, February 21st**

6 Sampling and Sampling distributions | Ch.6(6.1-6.4) |
7 Estimation:Single Population Confidence Intervals Student t Distribution | Ch.7(7.1-7.6) |

8 **Estimation:Additional Topics** | Chapter 8 |

**Midterm II  Monday, April 4th**

9 Hypothesis Testing Single Population | Ch.9(9.1-9.6) |

10 **Hypothesis Testing:Additional Topics** | Chapter 10 |
11 Simple Regression | Ch.11(11.1-11.4) |

12 **Analysis of Variance** | Chapter 15 |

**Final Exam**

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