

ECON 221: Introduction To Probability and Statistics

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Office Hours:	Mondays	11:40-12:30
Semester:	Fall 2015	
Section:	2	
Lecture Hours:	Mondays	13:40-15:30
	Wednesdays	15:40-17:30
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The course website will be: <http://www.mirzatrokic.ca/index.php/teaching/econ221>

Course Description

This course is the first part of a two part course aimed at introducing elementary concepts in probability and statistics. The course will open with both graphical and numerical descriptive statistics. Along the way, we will cover fundamentals in probability theory as well as discrete, continuous, multivariate, and sampling distributions. The course will close with several lectures on estimation theory. The primary aim of the course is to teach the student how to properly conduct statistical inference. Statistics is about making informed decisions with little information. As such, it is one of the most important and powerful sciences of our time. In fact, as we shall see, statistics is more than a science, it is an art! Students wishing to gain the most from this course will strive to gain statistical intuition and prowess. Once you complete this course, your skill set will not only be of use in economics and finance, but in virtually any field you can possibly imagine, including games like poker!

Course Literature

Required Textbook:	Wackerly et al. (2008)
Recommended Textbook:	Newbold et al. (2013)

Although you are responsible only for what is covered in class, you are encouraged to obtain at least the required textbook if for no other reason than to have access to additional practice problems. It is **imperative** to do as many problems from the textbooks as you possibly can. The **only** way you will succeed in this course is if you attend lectures regularly and solve many practice problems!

Course Software

Homework assignments may require the use of statistical software. The typical software of choice at this level is *Microsoft Excel*, but this is not the only option. In particular, for those that do not have Microsoft Office available on their laptops, there are free alternatives which look and behave exactly like Microsoft Office and in particular like Microsoft Excel. One alternative for the entire office suite is *LibreOffice* which can be downloaded here: <http://www.libreoffice.org/>. This includes the software *Calc* which is an Excel alternative. On the other hand, if you do not want an entire office suite but just an Excel replacement, a very good alternative, actually a better alternative, is *Gnumeric*. It can be obtained from: <https://projects.gnome.org/gnumeric/downloads.shtml>

Course Outline

Week 1 Introduction and Measures of Central Tendency and Variation

Week 2 Probability Theory I
Week 3 Probability Theory II
Week 4 Discrete Random Variables
Week 5 Continuous Random Variables
Week 6 Normal Distribution
Week 7 Midterm and Review
Week 8 Multivariate Random Variables I
Week 9 Multivariate Random Variables II
Week 10 Central Limit Theorem
Week 11 Sampling Distributions I
Week 12 Sampling Distributions II
Week 13 Estimation Theory I
Week 14 Estimation Theory II

Grading

The grading breakdown for the course is as follows:

Quizzes:	30%	There will approximately be five or six quizzes.
Midterm:	30%	
Final Exam:	40%	

This course will have regularly administered assignments which will be posted up on the course web page. Although your final grade will **not** depend on your assignment grade, you are **expected** to hand in your assignments in class on the day they are due! The T.A. will grade all submitted assignments and return them to you so that you may learn from them. Note that solution sets for assignments will be posted on the course web page in a timely fashion. Please note that late assignments will **not** be accepted and there will be **no** makeup for missed assignments.

There will be a short in-class quiz at the beginning of class on the day each assignment is due. Your final grade will depend on your performance on these quizzes. Please note that quizzes **cannot** be made up if you miss them or show up late to class on the day they are administered.

References

- P. Newbold, W.L. Carlson, and B.M. Thorne. *Statistics for Business and Economics*. Always learning. Pearson Education, Limited, 2013. ISBN 9780273767060. URL <http://books.google.com.tr/books?id=LtR7uAAACAAJ>.
- D.D. Wackerly, W. Mendenhall, and R.L. Scheaffer. *Mathematical Statistics with Applications*. Thomson Higher Education, 2008. URL <http://books.google.com.tr/books?id=ZvPKTemPsY4C>.