MA151 Statistics

Module: Statistics
Seminar Leader: Dirk Ehnts
Course Times: Tuesdays and Fridays 13:30-15:00
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Office Hours: Tuesdays 15:30-17:00

Course Description
This module is designed to introduce the methodologies proper to the empirical social sciences. Basic concepts of statistics, probability, probability distributions, random variables, correlation, and simple regression are introduced; the techniques of statistical inference hypothesis testing are developed.

Learning Outcomes:
- Mastery of basic concepts of probability theory and statistics
- Capacity to understand simple statistical tests and concepts of statistical inference
- Capacity to complete statistical exercises relevant to economics
- Knowledge of the basics of simple regression analysis

Requirements
None.

Textbooks

Attendance
Attendance at ALL classes is expected. More than two absences (that is absences from two sessions of 90 minutes) in a semester will significantly affect the grade for the course.

Assessment
Assessment will be based on attendance, preparation for classes, regular and active participation, problems sets, as well as a mid-term (60 minutes) and a final examination (90 minutes). The worst-graded problem set will not count towards the grade.

Policy on late submission of exercises
Exercises that are up to 24 hours late will be downgraded one full grade (from B+ to C+, for example). After that, I will accept late submissions only until the end of the week in which they were due (Sun, 23:59), but these cannot receive a grade of higher than C. Thereafter, the student will receive a failing grade for the assignment.

Grade Breakdown
Seminar preparation and participation 20%
Mid-term exam 20%
Problem sets 20%
Final examination 40%

Schedule
Classes start on Tuesday Jan 27 and run until Tuesday May 12, with spring break planned for Mar 16–20, 2014. Completion week will take place May 13–20.

The schedule provided is provisional in order to allow for flexibility. It is the students’ responsibility to keep themselves informed of any changes to the schedule provided here. An up-to-date schedule will be maintained by the seminar leader in our Google classroom system. Problem sets will be distributed and returned via Google classroom, as will lecture slides. Please sign in for the course, using the following code: “2b7lszj” (Classroom.google.com)

Scheduled class times are available online under the relevant course heading: http://www.berlin.bard.edu/academics/courses-new/spring-2015/

Please ensure that your course schedule takes account of federal holidays. Classes missed due to federal holidays will not be rescheduled.

Week 1 – Introduction/The role of Probability and Statistics in Economics;
Jan 27, Jan 30
Reading: Mendenhall/Beaver/Beaver, introduction

Week 2 – Describing data with graphs
Feb 03, Feb 06
Reading: Mendenhall/Beaver/Beaver, ch. 1

Week 3 – Describing data with numerical analysis
Feb 10, Feb 13
Reading: Mendenhall/Beaver/Beaver, ch. 2

Week 4 – Describing bivariate data
Feb 17, Feb 20
Reading: Mendenhall/Beaver/Beaver, ch. 13

Week 5 – Probability and probability distributions
Feb 24, Feb 27
Reading: Mendenhall/Beaver/Beaver, ch. 4

Week 6 – Several useful discrete distributions
Mar 03, Mar 06
Reading: Mendenhall/Beaver/Beaver, ch. 1

Week 7 – The normal probability distribution
Mar 10 (Mid-term), Mar 13
Reading: Mendenhall/Beaver/Beaver, ch. 6

Week 8 – Sampling distributions
Mar 24, Mar 27
Reading: Mendenhall/Beaver/Beaver, ch. 7

Week 9 – Large-Sample Estimation
Mar 31, Apr 03
Reading: Mendenhall/Beaver/Beaver, ch. 8

Week 10 – Large-Sample Tests of Hypotheses
Apr 07, Apr 10
Reading: Mendenhall/Beaver/Beaver, ch. 9

Week 11 – Inference from small samples
Apr 14, Apr 17
Reading: Mendenhall/Beaver/Beaver, ch. 10

Week 12 – The analysis of variance
Apr 21, Apr 24
Reading: Mendenhall/Beaver/Beaver, ch. 11

Week 13 – Linear regression and correlation
Apr 28, May 01
Reading: Mendenhall/Beaver/Beaver, ch. 12

Week 14 – Multiple regression analysis; Review
May 05, May 08
Reading: Mendenhall/Beaver/Beaver, ch. 13

Week 15/16 – Completion Week (FINAL EXAM on May 19, 13:30-15:00 @ tba)

Problem sets deadline
Problem sets are due before class one week after being given.

(version: 18.01.2015)