

MATH7343 Applied Statistics

Prof. Ding Spring 2021

Time and Room: Monday, Wednesday 5:50 pm - 7:20 pm Online (Zoom through Canvas)

Email: a DOT ding (at) northeastern dot edu

Office hours: Monday, Wednesday 4:30 pm - 5:30 pm Online (Zoom through Canvas)

Goals:

1. Teach basic concepts of statistics. The students should develop an understanding of the field of statistics and their applications.
2. Teach how to conduct standard statistical data analyses. The students should learn how to formulate a problem in statistical language, how to choose appropriate statistical methods, how to carry out the analysis using computers (R), and how to interpret the results and draw conclusions.
3. Teach the general way of statistical thinking. The students should learn to become informed and critical readers of quantitative arguments.

Text Book:

Principles of Biostatistics, 2nd edition, by *M. Pagano & K. Gauvreau*. Duxbury

Grading: 90% homework 10% project

Homework assignments are given out in class generally every week. No exams but larger homework assignments around midterm and final time will count a bit more in the grade.

The student will be assigned to groups of size five, conduct a data analysis project and write a report and present in class. 10% of the course grades counted from the project.

Notice: It is the student's responsibility to be aware of what happens in the classroom, including announcements of possible exam date changes, material that will be covered in them, adjustments to the syllabus that may occur.

Topics:

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| 1. Concepts and terminologies. | (Classnotes) |
| 2. Descriptive statistics. | Chapter 2 and 3. |
| 3. Probability. | Chapter 6 and 7 |
| 4. Inference about population means. | Chapter 8-11 |
| 5. Analysis of variance | Chapter 12 |
| 6. Nonparametric methods. | Chapter 13 |
| 7. Inference on proportions and contingency tables. | Chapter 14-16 |
| 8. Correlation and regression | Chapter 17-20. |
| 9. Selection of statistical methods | (Classnotes) |
| 10. Survival analysis | Chapter 5,21 |
| 11. Other topics | notes |

Course materials are available online through Canvas. (You can access Canvas through your MYNortheastern account: my.northeastern.edu)