

MATH 5910: Linear Statistical Modeling and Regression

Fall 2024

Instructor:

JS Lee

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Office hours:

MoTu 8:00-9:30 AM

Or by appointment

Class Web Page:

http://faculty.uml.edu/jongsoo_lee/5910F24.html

Be sure to look for announcements, homework assignments and other course materials there.

Classroom and Time:

Olsen 403

Tu 6:30-9:20 PM

Texts:

Required text:

- Weisberg, *Applied Linear Regression*, 4th edition, Wiley.

Other reading material and notes may also be distributed.

Overview:

This course introduces regression and linear models. Topics include: theory of linear models, simple regression, multiple regression, model computation and interpretation, extension of regression models (weighted regression, polynomial regression, regression with factors), transformation, diagnostics, outliers/influence, variable selection, selected topics in analysis of variance (ANOVA). We may cover additional topics in the textbook if the time permits.

This course will blend methodological theory with computing and applications. Matrix and linear algebra techniques will be used throughout the course, as well as some mathematical statistics techniques (see Appendix of Weisberg for more information). We will use R software for the computing.

Exams:

There will be a midterm exam (in-class) and a final exam (in-class and/or take-home).

Midterm Exam: Tuesday, October 29

Final Exam: Take-Home Due by Tuesday, December 17

Homework:

Homework will be assigned regularly. Each student must write up his/her own work independently. Late homework will be subject to penalty unless the student has obtained a prior approval from the instructor (not accepted at all if more than a few days late or unexcused).

Attendance Policy:

Attending every class is required, and you are responsible for everything said in class. Excused absences require valid justification, and make-up works are at the discretion of the instructor.

Academic Integrity:

Academic dishonesty is prohibited in all programs of the University and sanctions may be imposed on any student who commits an act of academic dishonesty. Details on UML policy can be found at

<http://www.uml.edu/Catalog/Graduate/Policies/Academic-Integrity.aspx>.

Course Grade (approximate):

- 60% Homework and participation
- 15% Midterm exam
- 25% Final exam