



THE OHIO STATE UNIVERSITY

STAT 4620

Introduction to Statistical Learning (25209)

Autumn 2026

Syllabus - Instructor Information

Massimiliano Russo

Professional Qualifications

PhD, Statistics, University of Padova, Italy

Syllabus - Required or Recommended Readings

Textbook: James, G., Witten, D., Hastie, T., and Tibshirani, R. An Introduction to Statistical Learning with Applications in R. Springer

Syllabus - Course Schedule

Week	Topics
1	Introduction; Linear Regression.
2	Beyond Linear Regression; Cross-Validation.
3	Classification: Logistic Regression, Linear Discriminant Analysis (LDA).
4	Bootstrap, Cross-Validation and Bootstrap Examples.

Week	Topics
5	Regularization: Ridge Regression, LASSO
6	Regularization: Dimension Reduction, PCA, PCR. Midterm 1
7	High Dimensional Data Analysis and the Curse of Dimensionality; Spline Regression; Smoothing Splines; Local Regression
8	Smoothing Splines; Local Regression
9	Generalized Additive Models (GAM), Regression and Classification Trees
10	Trees: Boosting, Random Forests
11	Trees; Clustering: K-means, Hierarchical
12	Midterm 2
13	Clustering: K-means, Hierarchical
14	Clustering: K-means, Hierarchical
15	Final project presentation

Syllabus - University Policies

Office of Undergraduate Education - Standard Syllabus Statements

- [Academic Misconduct](#)
- [Religious Accommodations](#)
- [Accommodations for Disability and Illness](#)
- [Intellectual Diversity](#)
- [Grievances and Solving Problems](#)
- [Creating an Environment Free from Harassment, Discrimination, and Sexual Misconduct](#)
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