Thematic Course

Academic Year	2024-25
Subject	Introduction to Empirical Bayes
Instructor	Valentino Dardanoni
Course description	This course is an introduction to Empirical Bayes theory and methods. Empirical Bayes is becoming a much-used tool to estimate models under heterogeneity. The course will review the main theory and properties of Empirical Bayes inference, with many applications. We will also discuss how to program Empirical Bayes estimation in Matlab, with many real data examples.
Learning Objectives	Learn to understand and use Empirical Bayes inference techniques.
Suggested readings	Efron, B. (2010). Large-Scale Inference: Empirical Bayes Methods for Estimation, Testing, and Prediction Gu, J. and Walters, C. (2022). NBER SI 2022 Methods Lectures - Empirical Bayes Methods, Theory and Application, https://www.nber.org/conferences/si-2022-methods-lectures-empirical-bayes-methods-theory-and-application.html Ignatiadis, N. and Sen, B. (2024). Lecture notes on empirical bayes. https://nignatiadis.github.io/assets/lecturenotes/Empirical-Bayes.pdf. Koenker, R. and Gu, J. (2024). Empirical bayes for the reluctant frequentist. arXiv preprint arXiv:2212.14444. Robinson, D. (2020). Introduction to Empirical Bayes: Examples from Baseball Statistics
Course Activity (hrs)	12
Credits	3
Assessment Method	Compulsory Attendance and Home Assignment
Teaching Methods	Lectures
Calendar	19 (9:13), 20 (8:12), 21 (9:13) November 2024 Classroom “A. Mineo” (2nd floor)
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