College of Management of Technology
Management of Technology Section

MGT581: Introduction to Econometrics

4 credits

Spring 2021

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Course website/moodle: This course uses Moodle.

Office hours: Friday from 3pm to 5pm via Zoom. Please seek email confirmation from the TA before meeting.

COURSE OVERVIEW

This course provides and introduction to the key principles in econometrics. It covers the following topics: linear and non-linear estimators; difference between correlation and causality; techniques to establish causal effects; and interpretation of effect size.

DIDACTIC APPROACH AND CLASS ATTENDANCE

The course involves three main learning channels: theory sessions, practical sessions, and problem sets. The Monday lecture will provide elements of theory, while the Friday sessions will provide hands-on experience with the *R* statistical software. Exercise sessions will follow closely material covered in class. Students will receive regular problem sets to submit to the T.A. Deadline for submission is 4 pm on the Thursday.

LEARNING OUTCOMES

By the end of the course, the student must be able to:

- Recognize pitfalls and bias in data collection and econometric models
- Illustrate the concept of endogeneity
- Check the validity of an econometric result
- Quantify an economic relationship
- Design an appropriate regression model
- Interpret coefficients of econometric regressions

MATERIALS

Slides will be uploaded on Moodle one week before the lecture.

The reference textbook is *not compulsory:*

James H. Stock and Mark W. Watson, Introduction to Econometrics, Third Edition (Updated Edition), Pearson. ISBN: 978-0-13348687-2 (http://www.isbnsearch.org/isbn/9780133486872)

FORM OF EXAMINATION & GRADING

- Individual project accounting for 60 per cent of the final grade.
- Individual problem sets accounting for 40 per cent of the final grade.

COURSE SCHEDULE: A QUICK OVERVIEW OF THE SESSIONS

Zoom link for Mondays: https://epfl.zoom.us/j/83031894326
Zoom link for Fridays: https://epfl.zoom.us/j/89621457683

Session	Date	Topics
1.	February 22	Introduction and review of key principles
	February 26	No exercise session
2.	March 1	Guest Speaker (François Chareyron, Lombard Odier) Linear regression with one regressor
	March 5	Exercise session 1
3.	March 8	… Hypothesis tests and confidence intervals
	March 12	No exercise session
4.	March 15	Linear regression with multiple regressor
	March 19	Exercise session 2
5.	March 22	… Hypothesis tests and confidence intervals
	March 26	Exercise session 3
6.	March 29	Nonlinear regression functions
	April 2	Good Friday
	April 5	Easter Monday
	April 9	Easter Holidays
7.	April 12	Assessing studies based on multiple regression
	April 16	Exercise session 4
8.	April 19	Regression with panel data
	April 23	Exercise session 5
9.	April 26	Regression with a binary dependent variable
	April 30	Exercise session 6
10.	May 3	Instrumental variables regression
	May 7	Exercise session 7
11.	May 10	Instrumental variables regression (continued)
	May 14	Exercise session 8
12.	May 17	Experiments and quasi-experiments
	May 21	No exercise session
13.	May 24	Whit Monday
	May 28	Exercise session 9
14.	May 31	Q&A session about the final exam
	June 4	No exercise session

Important dates for problem sets:

- Problem Set #1: available on March 12, submission on March 25
- Problem Set #2: available on April 23, submission on May 6
- Problem Set #3: available on May 21, submission on June 3