

A large banner with a dark grid background. It features various icons: a lightbulb, three people, a bar chart, a target, a magnifying glass over a pie chart, and gears. The main title is in large blue font, and the subtitle is in a smaller blue font. Below the subtitle are three informational boxes: 'Tipologia', 'Data', and 'Location'.

# An Introduction to Causal Inference in Experimental and Observational Settings

## Theory and practice

Tipologia  
Corso online -  
Numero chiuso

Data  
15 November  
2021



Location  
Online

## INTRODUZIONE

**Course linked to European Statistical Forum  
Application of Causal Inference in Drug Development  
16 November 2021 - Online**

**Discover the Agenda** <https://lsacademy.com/en/product/european-statistical-forum-2/>

Most scientific questions are causal in nature.

It is therefore necessary to introduce a formal causal language to help define causal effects and spell out the assumptions required to infer such effects from experimental and observational data.

## PROGRAMMA

The potential outcome approach to causal inference will be introduced and statistical methods for inferring causal effects from randomized experiments or observational studies will be presented.

Examples and practical sessions will be based on case studies in biostatistics, epidemiology, and public health.

- Introduction to causal inference from the potential outcome perspective.
- Design and analysis of randomized experiments: Fisher's exact p-values, estimators of average causal effects, regression, imputation-based approaches.
  - Practical session 1: Analyzing an RCT on the effect of statins on cholesterol
- Design and analysis of observational studies under confoundedness: the role of the propensity score; matching, weighting, regression estimators.
  - Practical session 2: Analyzing an observational study on the effect of statins
- Beyond RCTs. Intercurrent events: challenges and opportunities. Presentation of a case study with discussion.

*Lecture notes, slides, data, articles and other reading material will be distributed before the course. Practical sessions will be in R but no a priori knowledge of R is required.*

## A CHI È RIVOLTO

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The course is addressed to Statisticians, health professionals with statistical background, master and PhD students.

### **Participant experience**

Statistical inference, multivariate analysis.

## TECNICHE DIDATTICHE

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Lectures with some practical sessions/examples.

## DOCENTE/I

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### **Fabrizia Mealli**

#### **Professor of Statistics, Director of the Florence Center for Data Science at University of Florence**

Fabrizia Mealli is Professor of Statistics. Her research focuses on causal inference, program evaluation, estimation techniques, simulation methods, missing data, and Bayesian inference, with applications to the social and biomedical sciences. She held visiting positions at Harvard University, UCLA, LISER Luxembourg. She serves as coordinator of the Statistics track for the PhD program in Mathematics, Computer Science, Statistics of the University of Florence, and sits the Steering Committee of the European Causal Inference Meeting. She is Elected Fellow of the American Statistical Association, and currently an associate editor of "The Annals of Applied Statistics" and "Observational Studies".



## COSA SAPRAI FARE DOPO IL CORSO

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- Develop expertise to assess the credibility of causal claims and the ability to apply the relevant statistical methods for causal analyses.

## DURATA E INFORMAZIONI UTILI

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### Online Training - 1 module

15 November 2021 from 2:00 pm to 6:00 pm CET

After the registration, you will receive all details about the connection.

**The course will proceed with a minimum number of participants. Should this number not be reached the registered participants will be notified one week prior to the commencement of the course.**

## QUOTE ISCRIZIONE

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**Early Bird:** € 440,00\* (until 15 October 2021)

**Ordinary:** € 590,00\*

**Freelance - Academy - Public Administration\*\*:** € 265,00\*

\* for Italian companies: +22% VAT

\*\* *Early Bird discount not applicable to Freelance - Academy - Public Administration fee*

**The fee includes:** tuition, organizational office assistance, teaching materials and attendance certificate that will be sent after the training via e-mail.

## SEDE DEL CORSO

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Online interactive training on Zoom platform.  
*LS Academy will provide the access link to the virtual platform a few days before the training.*

