

## GENERAL DESCRIPTION

This course aims to provide participants with the theoretical and applied knowledge necessary to carry out a systematic review of scientific literature for the study of a well-defined hypothesis. To this end, the course focuses on the statistical aspects of the systematic review process, known as meta-analysis, the emphasis being placed on the interpretation and presentation of results, as opposed to the more theoretical computational aspects of meta-analyses.

In line with the general philosophy of our training courses, the lessons themselves are highly interactive and largely applied in nature. The original in presence course having been restructured into a series of separate modules in order to facilitate the transition to an effective online teaching format. Despite the online nature of the course, participants will be able to both replicate the commands illustrated by the lecturer in real time using the databases provided at the beginning of the course and be expected to take part in applied data sections.

### COURSE OUTCOME:

At the end of the course, participants are expected to:

- understand the fundamental concepts and principles of meta-analysis;
- have attained an understanding of “*real world*” data related to meta-analysis through this hands-on experience; and
- be able to carry out a statistical systematic review of scientific literature (with the help of the *Stata* routine templates specifically developed for the course) independently implementing the *Stata* meta-analysis commands illustrated during the course in their own research context.

## TARGET AUDIENCE

This course is of particular interest to graduate students, academic researchers and professionals working in the public health and medical sectors.

## PREREQUISITES

A working knowledge of the basic principles of biostatistics and epidemiology, as well as a basic knowledge of the statistical software *Stata*.

## PROGRAM

### SESSION I

1. Introduction to *Stata*
2. Stages of a systematic review
3. Measures of treatment effect (odds ratio, risk ratio, difference in means, hazard ratio)
4. Statistical methods for meta-analyses: fixed-effect and random-effects models
5. Introduction to *Stata*’s **meta** suite of commands
6. Graphical representation of meta-analysis results using the forest plot

### SESSION II

1. Quantifying the degree of heterogeneity across different studies
  - Subgroup analysis
  - Meta-regression
2. Publication bias: Funnel Plot, Egger’s test and the related *Stata* commands for itsestimation (**meta funnelplot**, **meta bias**)

## USEFUL REFERENCES

- Schmid, C. H., Stijnen, T. & White, I. R. (2021). *Handbook of Meta-Analysis*. CRC Press.
- Palmer, T. M. & Sterne, J.A.C. (2016) *Meta-Analysis in Stata: An Updated Collection from the Stata Journal*. Second Edition. *Stata Press Publication*.

## DATE AND LOCATION

The 2026 edition of this training course will be offered online on a part-time basis on the 16th-17th of April from 10:00 am to 1:30 pm CEST.

## COURSE LEADER

Prof. Sergio Venturini, Università Cattolica del Sacre Cuore, Piacenza.

## REGISTRATION FEES

Full-time Students\*: € 390.00

Ph.D. Students: € 500.00

Academic: € 555.00

Commercial: € 740.00

\*To be eligible for student prices, participants must provide proof of their **full-time student** status for the current academic year. Our standard policy is to provide all full-time students, be they Undergraduates or Masters students, access to student participation rates. Part-time master and doctoral students who are also currently employed will however, be allocated academic status.

Fees are subject to VAT (applied at the current Italian rate of 22%). Under current EU fiscal regulations, VAT will not however applied to companies, Institutions or Universities providing a valid tax registration number.

The number of participants is limited to 8. Places will be allocated on a first come, first serve basis. The course will be officially confirmed, when at least 5 individuals are enrolled.

Course fees cover: i) teaching materials – copies of lecture slides, databases and *Stata* programs specifically developed for the course; ii) a temporary licence of *StataNow™* valid for 30 days from the day before the course commences.

Individuals interested in attending this course must return their completed registration forms by e-mail to TStat by the 6th of April 2026.

## CONTACT INFORMATION:

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