



TRAINING COURSE | ONLINE

A GENTLE INTRODUCTION TO MATA

22-25 September 2020

Mata, Stata's relatively "low level" built-in matrix compiled language, is similar in many ways to R, Matlab or GAUSS. As such, it cannot be considered a replacement for Stata, nor is it intended to be a stand-alone statistical package in itself. Rather it is a programming tool which is best used as a supplement to Stata, in order to execute those tasks, which Stata does not do very well on its own. One of the main drawbacks in learning Mata however, is that the Mata Reference Manual, whilst extremely detailed, offers little advice on how Mata can be actively implemented. In this course therefore, we seek to bridge this gap, offering participants a gentle, but extensive introduction into Mata's programming capabilities. To this end, the opening sessions focus on more general considerations, such as when the use of Mata is either justified or warranted and offers participants an overview of Mata's syntax and its principle commands. The program then moves on to illustrate both Mata's functions and built-in libraries and how Mata's operators (such as functions, pointers and structures) and code can be effectively integrated in both user written *do* and *ado-files*.

At the end of the course, it is expected that participants will be able to independently implement the techniques learnt during the course of the workshop in order to be able to use Mata to work more effectively in Stata.

This course is, by its nature, to be considered very much a "hands-on/applied training course". Each session is composed of both a theoretical component (in which the techniques are explained), and an applied (hands-on) segment, during which participants have the opportunity to implement the techniques under the watchful eye of the course tutor. Throughout the course, theoretical sessions are reinforced by practical examples, in which the course tutor discusses and highlights potential pitfalls and the advantages of individual programming techniques.

COURSE CODE

D-IN19-OL

DATE AND LOCATION

Due to the current COVID-19 situation, the 2020 edition of this training course will now be offered **ONLINE**, on a part-time basis from the 22nd to the 25th September 2020. To this end, this year's programme has been transformed into a series of modules based on 4 sessions scheduled Tuesday to Friday from 10.00 am to 1.30 pm Central European Summer Time (CEST).

REGISTRATION DEADLINE

Individuals interested in attending this workshop must return their completed registration forms by e-mail to TStat by the **2nd September 2020** (training@tstat.eu).

TARGET AUDIENCE

Researchers in any field interested in learning Stata's programming matrix language. Ph.D. students and researchers interested in extending their existing knowledge of Mata.

PREREQUISITES

A good knowledge of *do* files programming and a basic knowledge of *ado* files programming is required. The knowledge of alternative "low-level" and matrix programming languages may greatly enhance the understanding of more advanced topics like pointers, structures and classes.

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PROGRAM

- SESSION I:**
1. A Mata taxonomy
 2. Obtaining help in Stata
 3. Using Mata interactively
 4. Mata syntax and operators
 5. Subscripting
 6. Customizing graphs
 7. Functions: types, declarations and arguments
 8. Compile and use a function
 9. Flow of control: loops and branching
 10. Built-in Mata functions
 11. Mata libraries
 12. Using Mata with *do-files*
- SESSION II:**
1. Functions of functions
 2. Pointers and structures
 3. Classes
 4. Optimization: **optimize** and **moptimize**
 5. Using Mata with *ado-files*

COURSE REFERENCES

An Introduction to Stata Programming, Christopher F. Baum, Second Edition, Stata Press 2016

The Mata Book: A Book for Serious Programmers and Those Who Want to Be, William Gould, Stata Press 2018

CONTACTS

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REGISTRATION FEES

Full-Time Students*: € 640.00
Academic: € 890.00
Commercial: € 1190.00

*To be eligible for student prices, participants must provide proof of their full-time student status for the current academic year.

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: teaching materials (handouts, Stata do-files, program templates and datasets to use during the course), a temporary course licence of Stata valid for 30 days from the beginning of the course.

Further details regarding our registration procedures, including our commercial terms and conditions, can be found at <https://www.tstattraining.eu/training/gentle-introduction-mata-ol/>

