



Direzione Ricerca,  
Innovazione e  
Internazionalizzazione

**UNIVERSITÀ  
DI TORINO**

**ID**

**VP\_071\_ESOMAS**

## **Visiting Professor Program Academic Year 2025/2026**

**TEACHING COMMITMENT:** 16 hours

**COURSE TITLE**

**Data Management and Programming**

**TEACHING PERIOD**

I semester

**SCIENTIFIC AREA**

Computer Science

**LANGUAGE USED TO TEACH**

English

**COURSE SUMMARY**

This course is structured into three key modules, each designed to equip students with essential skills in database management and programming.

Module 1: Introduction to database management and programming. This module delves into the fundamentals, addressing key questions such as the nature of databases, the software employed for effective database management, and the diverse economic-financial analyses achievable through data utilization. Participants will gain insights into various data types, including firm-level data, surveys on individuals and households, matched employer-employee data, and data related to patents.

Module 2: R. The second module introduces participants to the R software. Covering the basics, participants will learn to use R as a calculator, understand different objects and file formats (.R and .Rdata), import and clean data, and perform descriptive statistics and graphical analyses. The module also includes an introduction to programming in R, covering essential concepts like loops and function definition.

Module 3: STATA. In the third module, participants will explore the STATA software, understanding file formats (.do, .dta, .log), importing data sets, creating new variables, and implementing data cleaning techniques. Basic statistical analyses, including univariate and bivariate statistics, along with graphical representation, will be covered. The module concludes with an introduction to programming in STATA.

### **LEARNING OBJECTIVES**

The objectives of this course are as follows:

- (i) learn the theoretical basis of data management and programming;
- (ii) know the basics for managing, organizing, and processing data with the R software;
- (iii) know the basics of the STATA software. At the end of this module, the student will have basic knowledge to manage databases with the R and STATA software.

The student will also be able to apply programming techniques (for example, use of loops and macro variables) to process data and conduct basic statistical analysis.

### **OTHER ACTIVITIES BESIDE THE COURSE**

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### **VISITING PROFESSOR PROFILE**

The Visiting Professor should be proficient in the utilization of the STATA software and have expertise in managing and analyzing economics/financial data sets.

### **CONTACT REFERENT**

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