



DATA SCIENCE &  
ARTIFICIAL INTELLIGENCE

SCIENTIFIC &  
DATA-INTENSIVE COMPUTING



**UNIVERSITÀ  
DEGLI STUDI  
DI TRIESTE**

# Introduction

Introductory course on Statistics and Probability

Nicholas A. Pearson

Università degli Studi di Trieste

September 8, 2025

# Useful Information

Data Science and Artificial Intelligence - Introductory Courses					
08-12 September 2025					
	Monday	Tuesday	Wednesday	Thursday	Friday
9.00-10.00	Programming C2 building, room A	Programming C2 building, room A	Programming C2 building, room A	Programming C2 building, room A	Programming C2 building, room A
10.00-11.00					
11.00-12.00	Statistics C2 building, room A	Statistics C2 building, room A	Statistics C2 building, room A	Linear Algebra C2 building, room A	Linear Algebra C2 building, room A
12.00-13.00					
13.00-14.00					
14.00-15.00	Programming C2 building, room A	Programming C2 building, room A	Programming C2 building, room A	Programming C2 building, room A	Statistics C2 building, room A
15.00-16.00					
16.00-17.00	Statistics C2 building, room A	Statistics C2 building, room A	Statistics C2 building, room A	Statistics C2 building, room A	
17.00-18.00					
15-19 September 2025					
	Monday	Tuesday	Wednesday	Thursday	Friday
9.00-10.00	Programming D building, room 1B	Programming D building, room 1B			
10.00-11.00					
11.00-12.00	Linear Algebra D building, room 1B	Linear Algebra D building, room 1B	Linear Algebra D building, room 1B		
12.00-13.00					
13.00-14.00					
14.00-15.00	Programming D building, room 1B		Linear Algebra D building, room 1B		
15.00-16.00					
16.00-17.00	Statistics D building, room 1B				
17.00-18.00					

Email: [nicholasandrea.pearson@phd.units.it](mailto:nicholasandrea.pearson@phd.units.it)

# Acknowledgements and Materials

This presentation builds on the contributions made by **Luca Pennella** and **Lea Anna Cozzucoli** in previous years.

I would like to sincerely thank them for their valuable work and support.

# Course Contents

This is an introductory course aimed at reviewing basic statistical concepts, including:

- ▶ **Descriptive Analysis:** frequency distributions, graphical displays, measures of location and shape;
- ▶ **Elements of Probability:** events, axioms of probability, discrete and continuous variables, and random variables;
- ▶ **Introduction to R:** fundamentals of R programming language, data visualization and data analysis
- ▶ **Introduction to Statistical Inference:** *if there is enough time.*

# Materials

All of the materials will be uploaded day by day in a MS Teams folder and in the following github repository:

<https://github.com/nicholaspearson43/IntroStatistics2025>

Textbooks:

- ▶ Cicchitelli G., D'Urso P., Minozzo M., Statistics: Principles and methods, 1st Edition (2021), Pearson
- ▶ Rafael A Irizarry, Introduction to Data Science Statistics and Prediction Algorithms Through Case Studies