

**Ph.D. Program in**

*Management for Digital Transformation: Business, Communication and Ethics*

**INTRODUCTION TO GRAPH THEORY AND APPLICATIONS**

**In collaboration with the**

**Ph.D. Program in Consumers and Markets**

*Curriculum: Finance, markets and regulation*

**Given by** Andrea Scozzari | Full Professor of Mathematical Methods of Economics, Finance and Actuarial Sciences at University Niccolò Cusano, Department of Economic, Psychological, Communication, Educational and Motor Sciences.

**When** Monday 31<sup>st</sup> March, h: 14:30 – 17:30; Wednesday 2<sup>nd</sup> April, h: 13:00 – 15:00; Tuesday 8<sup>th</sup> April, h: 14:30 – 17:30.

**Where** University Niccolò Cusano | Via Don Carlo Gnocchi 3, 00165 - Rome, Italy |

**Main Topics:**

**LECTURE I (3 hours)**

[https://servizi.unicusano.it//bbb-conference/?module=room&meetingID=Scozzari\\_3103&attendee=true](https://servizi.unicusano.it//bbb-conference/?module=room&meetingID=Scozzari_3103&attendee=true)

- Graphs, Simple Graphs and their representation
- Paths, Cycles and Connectivity
- Subgraphs, Trees
- Applications

**LECTURE II (2 hours)**

[https://servizi.unicusano.it//bbb-conference/?module=room&meetingID=Scozzari\\_0204&attendee=true](https://servizi.unicusano.it//bbb-conference/?module=room&meetingID=Scozzari_0204&attendee=true)

- Centrality Measures: Closeness centrality, Betweenness centrality, Eigenvector centrality.
- Concentration measures: Freeman, Entropy
- Applications

**LECTURE III (3 hours)**

[https://servizi.unicusano.it//bbb-conference/?module=room&meetingID=Scozzari\\_0804&attendee=true](https://servizi.unicusano.it//bbb-conference/?module=room&meetingID=Scozzari_0804&attendee=true)

- Flows
- Applications

**Material:**

Supporting material will be provided during the course.