

UNIVERSITÀ DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Bioinformatics and Biostatistics for Big Data and Real World Studies

2324-1002-05

Titolo

Bioinformatics and Biostatistics for Big Data and Real World Studies

Docente(i)

- Daniela Besozzi
- Daniele Papetti
- · Paola Rebora
- Anita Andreano
- Marco Villa
- · Carlo Alberto Scirè
- Davide Bernasconi
- Isabella Castiglioni
- Elisabetta De Bernardi
- Daniele Ramazzotti
- Fabio Stella
- Marco S. Nobile
- Camilla Torlasco

Lingua

English

Breve descrizione

COURSE OBJECTIVES

Introduction to Machine Learning and Big Data

To cover modern methods related to artificial intelligence.

Big Data and Real World Studies - Winter School

To understand the different types of studies in epidemiological research and applications of bioinformatics on big data in medical research.

TOPICS

Introduction to Machine Learning and Big Data
Introduction to machine learning – 2h Daniela Besozzi
Unsupervised learning – 2h Daniela Besozzi
Neural networks and deep learning – 4h Daniele Papetti

Big Data and Real World Studies - Winter School

Epidemiological designs - 7h Paola Rebora

Epidemiological designs – 3h Anita Andreano

Introduction to Real World Data, Geo-spatial analysis – 4h Marco Villa

Real world study - 2h Carlo Alberto Scirè

Introduction to causal models - 4h Davide Bernasconi

Computational methods for big medical-imaging data – 2h Isabella Castiglioni

Radiomics in oncological and fibrous diseases imaging – 2h Elisabetta De Bernardi

From data to models in pandemics – 2h Daniela Besozzi

Fairies in the modern world: applications and impact of artificial intelligence in cardiac imaging – 2h Camilla Torlasto

Mutational signatures in human cancers – 2h Daniele Ramazzotti

Integrative clustering of genomic data - 2h Daniele Ramazzotti

Interpretable and explainable artificial intelligence – 2h Marco S. Nobile

Computational intelligence for biomedicine and healthcare – 2h Marco S. Nobile

Bayesian and causal networks - part I - 2h Fabio Stella

Bayesian and causal networks - part II - 2h Fabio Stella

CFU / Ore

6 / 48

Periodo di erogazione

Introduction to Machine Learning and Big Data
October 18th 17.00-19.00 Daniela Besozzi - STREAMING
October 20th 17.00-19.00 Daniela Besozzi - STREAMING
October 21st 9.00-13.00 Daniele Papetti - STREAMING

Big Data and Real World Studies - Winter School

October 23rd 9.00-12.00 Marco Villa - IN PRESENCE

October 23rd 12.00-13.00 Davide Bernasconi - IN PRESENCE

October 23rd 14.00-17.00 Davide Bernasconi - IN PRESENCE

October 23rd 17.00-18.00 Marco Villa - IN PRESENCE

October 24th 9.00-10.00 Paola Rebora - IN PRESENCE

October 24th 10.00-12.00 Carlo Alberto Scirè - IN PRESENCE

October 24th 12.00-13.00 Anita Andreano - IN PRESENCE

October 24th 14.00-15.00 Anita Andreano - IN PRESENCE

October 24th 15.00-18.00 Paola Rebora - IN PRESENCE

October 25th 9.00-13.00 Paola Rebora - IN PRESENCE

October 25th 14.00-16.00 Isabella Castiglioni - IN PRESENCE

October 25th 16.00-18.00 Elisabetta De Bernardi - IN PRESENCE

October 26th 9.00-11.00 Daniela Besozzi - IN PRESENCE

October 26th 11.00-13.00 Camilla Torlasco - IN PRESENCE

October 26th 14.00-18.00 Daniele Ramazzotti - IN PRESENCE

October 27th 9.00-13.00 Marco S. Nobile - IN PRESENCE

October 27th 14.00-18.00 Fabio Stella - IN PRESENCE

COURSE EVALUATION: November 18th 10.00-12.00

Sustainable Development Goals