Anno Accademico 2025/26

42.DATA SCIENCE AND STATISTICAL LEARNING (MD2SL)

II livello

Florence Center for Data Science

Dipartimento di Statistica, Informatica, Applicazioni "G. Parenti"

Corso realizzato in collaborazione con

Scuola IMT Alti Studi Lucca

con rilascio di titolo congiunto

Coordinatrice del corso

Chiara Bocci

PIANO DI STUDI

Insegnamento	Settore Scientifico Disciplinare	CFU
Primo blocco – Bootcamp courses		
Mathematics and Statistics for Data Science		**10**
Optimization	MAT/09	2
Numerical calculus and linear algebra	MAT/08	2
Probability and stochastic processes	MAT/06	2
Statistical inference	SECS-S/01	2
Statistical modelling	SECS-S/01	2
Algorithmic Foundations and Programming Skills		**6**
Algorithms and programming in Python for data science	INF/01	2
Algorithms and programming in R for data science	SECS-S/01	1
Machine learning	ING-INF/05	2
Optimization for machine learning	MAT/09	1
Secondo blocco – Core courses		
Statistical Learning for Data Science		**6**
Statistical learning	SECS-S/01	2
Geo-spatial data analysis	SECS-S/01	2
Network data analysis	SECS-S/01	2
Supervised and Unsupervised Learning		**6**
Advanced machine learning	MAT/09	3
Deep learning, neural networks, and reinforcement learning	ING-INF/05	3
Complex Systems		**6**
Text mining and NLP	ING-INF/05	2
Complex networks analysis	FIS/03	2
Complex systems analysis	FIS/03	2
Decision Theory for Data Science		**7**
Bayesian and causal inference	SECS-S/01	3
		3
Analytics in economics and business	SECS-P/06	3
Ethics and law for data science	IUS/08	1

Ethics and law for data science		
Hands-on labs	INF/01	**4**
Terzo blocco – Elective courses		
Due insegnamenti a scelta tra		
1) Data Science for Economics		**4**
Experiments and real-world evidence in economics - Part A	SECS-P/02	1
Experiments and real-world evidence in economics - Part B	SECS-P/01	1
Policy evaluation and impact analysis	SECS-P/06	2
2) Data Science for Business		**4**
Time series analysis	SECS-S/03	2
Financial risk management	SECS-S/06	2
		2
3) Data Science for Health		**4**
Health analytics and data-driven medicine	SECS-P/02	2
Environmental and genomic data analysis	MED/01	2
Totale CFU didattica frontale		**53**
Seminars, real-case studies by colleagues and partners		2
Tirocinio		9
Prova finale		3
Totale CFU		**67**

MODULI SINGOLI

Insegnamento	Settore Scientifico Disciplinare	CFU
Algorithmic Foundations and Programming Skills		**6**
Algorithms and programming in Python for data science	INF/01	2
Algorithms and programming in R for data science	SECS-S/01	1
Machine learning	ING-INF/05	2
Optimization for machine learning	MAT/09	1
Statistical Learning for Data Science		**6**
Statistical learning	SECS-S/01	2
Geo-spatial data analysis	SECS-S/01	2
Network data analysis	SECS-S/01	2
Supervised and Unsupervised Learning		**6**
Advanced machine learning	MAT/09	3
Deep learning, neural networks, and reinforcement learning	ING-INF/05	3
Complex Systems		**6**
Text mining and NLP	ING-INF/05	2
Complex networks analysis	FIS/03	2
Complex systems analysis	FIS/03	2
Decision Theory for Data Science		**7**
Bayesian and causal inference	SECS-S/01	3

		3
Analytics in economics and business	SECS-P/06	3
Ethics and law for data science	IUS/08	1