



DIPARTIMENTO DI
ECONOMIA
UNIVERSITÀ DEGLI STUDI DI GENOVA

ECONOMICS
&
DATA SCIENCE



Master's Degree in Economics & Data Science

- ❖ In 2019, the Data Analytics market reached a value of €1.7 billion, growing by 23% compared to the last year, more than twice as much as in 2015 (Politecnico di Milano, Report Big Data 2020).
- ❖ The growing relevance of digital information, the increase in online commerce, the ability to manage and make usable big data, the change in firms' management and organisation in a data-driven perspective are the elements that are driving the Data Analytics market growth.
- ❖ Digital Transformation and Eco-Sustainability issues will play a decisive role in characterising the employment requirements of various economic sectors, involving around 30% of the workers that firms and Public Administration will need in the next five years (2019-2023 Unioncamere data).

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- ❖ Among the most required professional profiles in the coming years, there will be experts in data analysis, cyber security, artificial intelligence and market analysis.
- ❖ The search for e-skills will not be confined to "technical" functional areas (Information Technology, R&D), but will increasingly be also present in other areas: administration, human resources, general services and staff functions. More than 9 out of 10 profiles are associated with the demand for e-skills.
- ❖ The large part of the demand will come from the public administration and large bureaucratic organizations. Our Consulta suggests that not only private companies require these skills, but also the health sector. Indeed, the city's main hospital have made themselves available to receive trainees.

Medium-term forecast of employment and professional needs in Italy (2019-2023)

FABBISOGNI OCCUPAZIONALI CON COMPETENZE ECOSOSTENIBILI E DIGITALI E PER "FILIERA" – 2019-2023

	FABBISOGNO TOTALE (v.a.)		MEDIA ANNUA (v.a.)	
	SCENARIO A	SCENARIO B	SCENARIO A	SCENARIO B
TOTALE	2.725.500	3.029.800	545.100	606.000
Ecosostenibilità	518.100	576.000	103.600	115.200
Digitale	268.800	300.100	53.800	60.000
Filiere				
Salute e benessere	361.500	381.000	72.300	76.200
Education e cultura	140.200	161.200	28.000	32.200
Meccatronica e robotica	68.800	82.900	13.800	16.600
Mobilità e logistica	85.400	98.200	17.100	19.600
Energia	39.800	42.600	8.000	8.500

Fonte: Unioncamere-ANPAL, Sistema Informativo Excelsior

*Scenario A) IMF forecast

Scenario B) Government forecast

Forecasts include *expansion demand* as well as *replacement demand*

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AIM OF THE COURSE

- ❖ To create a new professional profile, absent from the educational landscape of the University of Genoa and strongly demanded by the market, characterized by the combination of economic and quantitative skills that are indispensable in the information society.
- ❖ The graduate in Economics and Data Science will have an in-depth knowledge of the economic theory underlying the choices of agents and the functioning of markets. In addition, he/she will acquire high competences in Mathematics, Statistics, Econometrics and in main Big Data analysis techniques.
- ❖ The course will emphasise the acquisition of practical expertise in data processing and interpretation, thanks to the collaboration of the different actors involved in the project.
- ❖ As previously explained, the organizations involved in the project made themselves available to form trainees.

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AIM OF THE COURSE

- ❖ The high level of skills acquired during the course will enable graduates to perform economic-quantitative analyses independently and to interact with data science experts. Such analyses are at the basis of improved decision-making processes in both business and institutional settings.
- ❖ Economics and Data Science will be the first fully English-language Master's Degree course in the School of Social Sciences that will also be open to bachelor graduates from other Departments or Universities.
- ❖ The small class size that we would like to maintain will allow for innovative teaching that is strongly oriented towards full collaboration with the world of work.

Master's Degree in Economics & Data Science

	CFU
Geopolitics/Financial Economics	6
Mathematics for economics and data science	15
Training activities: Python algorithms and optimization	6
Statistical Models	9
Economic Analysis	12
Environmental Economics/Health economics	9
Time series econometrics /Policy evaluation methods	9
Risk management techniques	6
Big Data Techniques	6
Fintech and digital economy law	6
Fundamentals of strategic business management	6
Elective courses	12
Extra curricular activity : Software R	3
DISSERTATION	12
Total CFU	120