UNIVERSITÀ
DEGLI STUDI
DI MILANO

Master's degree programme in

Data science for economics and health

facoltà di

SCIENZE E TECNOLOGIE

The DSEH degree programme is an Interfaculty course between Science and Technology and Political, Economic and Social Sciences

Applications and admissions

Open, subject to entry requirements.

Admission requirements

Admission is conditional and it depends on the assessment of the personal competencies and skills of the candidate according to the evaluation of the Admission Board of DSEH. Applicants may come from various bachelor's but must have earned at least 30 ECTS in computer science and mathematics and/or in economic sciences, statistics, and statistical medical sciences (with restrictions: the accepted scientific sectors are published on the DSEH website).
Applicants must take and pass a written online test in English (passing the test is a requirement for admission. Further information about the test and the related organization are published on the DSEH website).
For applicants who meet the curricular requirements and obtain a result over the threshold in the admission test, the Admission Board assesses the personal competencies and skills of applicants based on the coherence of the academic curriculum with respect to the DSEH programme. The Admission Board can require the applicant an oral interview, aimed at verifying the individual knowledge and skills required by DSEH. The oral interview is organized in English via remote communication platforms (e.g., Teams, Zoom). A complete, detailed list of the interview topics is published on the DSEH website.

The B2 level in the English language is a further entry requirement. Candidates can prove their English proficiency by presenting:
- A language certificate at B2 level or higher recognized by the University of Milan and obtained no more than three years earlier;
- The result of a Placement Test taken at the Language Centre (SLAM) of the University of Milan;
- An English assessment at B2 level or higher obtained in the framework of a Bachelor's degree programme through SLAM courses and tests no more than four years earlier.

The candidates that do not satisfy the requirement by the deadline will not be admitted to the Master's degree programme and they will not have the opportunity to take further tests.

Candidates without an Italian degree or diploma must obtain 3 credits in "Additional language skills: Italian" by proving an Italian language proficiency at level A2 within the Common European Framework of Reference for Languages (CEFR). The level of Italian proficiency can be assessed by the end of the degree course according to one of the following ways:
- by submitting a language certificate at A2 level or higher recognized by the University of Milan and obtained no more than three years earlier to the submission;
- by passing an entry-level test, organized by SLAM, which can be taken at the beginning of each semester.

Objectives

This DSEH programme aims to provide advanced education on methodological methods and tools in computer science, statistics, and mathematics designed to interpret and analyze complex phenomena in the fields of economics and health. DSEH focuses on the analysis of the effects of economic policies, as well as the evaluation of actions and any other activity related to the sectors of economy, environment, marketing and business. Moreover, the programme aims to provide the foundations of epidemiology and biostatistics on which to graft the acquired knowledge of data analysis. The course of study enforces the construction of solid methodological bases by addressing topics of the economic theory, decision theory under uncertainty conditions, micro-econometric techniques and time-series analysis. It also fosters the study of emerging data management technologies and scalability of analysis systems in cloud environments, as well as machine learning techniques for the extraction and classification of information.

Career prospects

The Master programme in Data Science for Economics and Health aims to train the following professional figures.

Data Scientist

Its main functions are i) to analyze and elaborate forecasts on large data flows, ii) to identify and apply the most suitable software tools and statistical techniques for their processing, iii) to create complex models for predictive data- based analysis. The Data Scientist knows the different contexts in which data emerge, and she/he knows how to interact with experts from various disciplines.

Data Analyst

Its main functions are the identification and supervision of operational decision-making processes in direct coordination with the company executive management. They can work in marketing, business, management innovation, and finance.

Data Driven Economist

Its main functions are to frame problems of economic analysis in the context of data science by identifying data and technologies capable of providing new keys to interpret or to evaluate economic and social phenomena.

Data Driven Decision Maker

Its main functions are to exercise managerial functions of high responsibility in private and public companies with an international vocation and a strong technological component, using data analysis to guide strategic and operational decisions.

Analyst of development projects or economic policies

Its main functions are to contribute to the formulation, monitoring and analysis of development projects or economic policies.

Health Analyst

Its main functions are to define the most appropriate study type modalities to answer questions related to the relationship between exposure and health in the population, propose the most appropriate statistical, computational and data management methods for experimental and observational studies.

Degree syllabus

I year

COMPULSORY LEARNING ACTIVITIES	ECTS
I semester	
Coding for data science and data management	12
Statistical Theory and Mathematics	12
Data-Driven Economic Analysis	12
Machine learning and Statistical learning	12
1 course chosen from the following list according to the selected path: PATH: DATA SCIENCE and ECONOMIC DATA ANALYSIS - Dynamic Economic Modeling PATH: HEALTH - Introduction to Biostatistics and Epidemiology	9

II year
(to be made available as of academic year 2027/2028)

COMPULSORY LEARNING ACTIVITIES	ECTS
Data Governance and Data protection: Technical and Legal Perspectives	12
Cloud Computing and Algorithms for Massive Datasets	6

Elective courses

3 activities for 18 ects within the corresponding list according to the selected path

PATH: DATA SCIENCE

3 COURSES CHOSEN FROM THE FOLLOWING LIST:	ECTS
- Marketing Analytics - Natural Language Processing - Network Science - Probabilistic Modeling *(not active in 2026-2027)* - Scientific Data Visualization - Time Series and Forecasting - Advanced Multivariate Statistics - Bayesian Analysis - Chemometrics - Functional and Topological Data Analysis - Organizations, Innovations, and Intelligent Technologies - Reinforcement Learning	6+6+6

PATH: ECONOMIC DATA ANALYSIS

3 COURSES CHOSEN FROM THE FOLLOWING LIST, AT LEAST 2 AMONG THOSE MARKED WITH THE SYMBOL *	ECTS
- Advanced Causal Inference and Policy Evaluation * - Applied Climate Economics - Global and Climate Change Economics - Natural Language Processing - Network Science - Probabilistic Modeling *(not active in 2026-2027)* - Scientific Data Visualization - Time Series and Forecasting * - Advanced Multivariate Statistics - Bayesian analysis - Environmental Data Analysis and Policy * - Reinforcement Learning	6+6+6

PATH: HEALTH

3 COURSES CHOSEN FROM THE FOLLOWING LIST, AT LEAST 1 AMONG THOSE MARKED WITH THE SYMBOL *	ECTS
- Advanced Causal Inference and Policy Evaluation - Fundamentals of Artificial Intelligence for Data Analysis in Molecular Epidemiology * - Natural Language Processing - Network Science - Probabilistic Modeling *(not active in 2026-2027)* - Scientific Data Visualization - Advanced Biostatistics and Epidemiology * - Advanced Multivariate Statistics - Bayesian Analysis - Chemometrics - Reinforcement Learning	6+6+6

Elective activities common to all the paths

- 9 ECTS for elective activities
- 3 ECTS for internship/stage, training and orientation internship
- 3 ECTS for Italian Language (only students without an Italian degree or diploma)
- 3 ECTS for Transversal Skills/Laboratory (only students not involved in the verification of the Italian Language)
- 12 ECTS for final exam

INFO

Disciplinary classification: LM DATA - DATA SCIENCE

Duration: 2 years (120 ects)

Attendance: No obligation

Locations:
- Department of Computer Science "Giovanni degli Antoni" - via Celoria, 18 - Milan
- Department of Economics, Management and Quantitative Method - via Conservatorio, 7 - Milan

For information:
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Updated in May 2026.
For further information: www.unimi.it - Education