

## MASTER'S DEGREE IN DATA SCIENCE

(LM Data - Data Science class)

Annual Manifesto (Study program) A.Y. 2022-2023

### Educational offer

In the Master's Degree in Data Science, FDS01Q code, LM Data – Data Science class, the following course year will be activated:

- first year for students enrolled in the A.Y. 2022-2023, cohort 2022, relevant didactic regulation FDS01Q-22: <https://elearning.unimib.it/course/view.php?id=46143&lang=en>

### Active courses in the A.Y. 2022-23 (FDS01Q code, LM Data - Data Science class)

#### FIRST YEAR (for students enrolling in the A.Y 2022-2023):

Course denomination and code	Course CFU (credits)	Educational activity – typology	SSD (Scientific-Disciplinary Sector)	Module denomination	Module CFU (credits)	Semester
DATA MANAGEMENT AND VISUALIZATION – FDS01Q001	12	Mandatory - Characterizing	INF/01	DATA MANAGEMENT	6	First Semester
			INF/01	DATA VISUALIZATION	6	
FOUNDATIONS OF COMPUTER SCIENCE – FDS01Q009	6	Mandatory to be chosen - Characterizing	INF/01	FOUNDATIONS OF COMPUTER SCIENCE	6	First Semester
FOUNDATIONS OF PROBABILITY AND STATISTICS – FDS01Q006	6	Mandatory to be chosen - Affine/integrative	SECS-S/01	FOUNDATIONS OF PROBABILITY AND STATISTICS	6	First Semester
JURIDICAL AND SOCIAL ISSUES IN INFORMATION SOCIETY – FDS01Q005	6	Mandatory - Characterizing	IUS/09	JURIDICAL AND SOCIAL ISSUES IN INFORMATION SOCIETY	6	First Semester

MACHINE LEARNING AND DECISION MODELS FDS01Q002	12	Mandatory - Characterizing	INF/01	MACHINE LEARNING	6	First Semester
			MAT/09	DECISION MODELS	6	Second Semester
DATA SCIENCE LAB – FDS01Q003	6	Mandatory - Characterizing	SECS-S/01	DATA SCIENCE LAB	6	Second Semester
DATA SEMANTICS – FDS01Q010	6	Mandatory to be chosen - Characterizing	INF/01	DATA SEMANTICS	6	Second Semester
FINANCIAL MARKETS ANALYTICS - FDS01Q007	6	Mandatory to be chosen - Affine/integrative	SECS-S/01	FINANCIAL MARKETS ANALYTICS	6	Second Semester
FOUNDATIONS OF DEEP LEARNING FDS01Q012	6	Mandatory to be chosen - Characterizing	INF/01	FOUNDATIONS OF DEEP LEARNING	6	Second Semester
MARKETING ANALYTICS – FDS01Q008	6	Mandatory to be chosen - Affine/integrative	SECS-P/08	MARKETING ANALYTICS	6	Second Semester
STATISTICAL MODELING – FDS01Q004	6	Mandatory - Characterizing	SECS-S/01	STATISTICAL MODELING	6	Second Semester

All courses are taught in English

### Enrolment in the program

The Master's Degree programme is addressed to students who have:

- a Bachelor's Degree (or a three-year university diploma), or a Master's Degree or a foreign academic qualification recognised as appropriate by the University, as long as they have gained at least 30 CFUs in the following academic disciplines:
  - INF/01;
  - ING-INF/0;
  - from SECS-S/01 to SECS-S/06;
  - from MAT/01 to MAT/09;
  - from FIS/01 to FIS/08;

- English language proficiency at a level not lower than B2.

Once the curricular requirements have been verified, admission to the course is conditional on the assessment of the adequacy of the personal preparation, which will be carried out through an interview by a specific commission.

The interview will mainly focus on verifying basic computer science knowledge (knowledge of programming and database languages) and basic statistics (descriptive statistics, probability, inference).

During the interview, the commission will be able to suggest to the candidates the opportunities for in-depth disciplinary courses.

Knowledge of the English language at a level equal to or higher than B2 can be verified with one of the following modalities:

- certification issued by the University or a certifying Body recognised by our University equivalent to level B2;
- the Bbetween English B2 Open Badge awarded by the University of Milano-Bicocca;
- an exam of at least 4 CFUs passed during previous career, in one of the following academic disciplines: L-LIN/10, L-LIN/11, L-LIN/12;
- degree program if entirely or almost entirely taught in the English language.

In the days following the interview, the admitted students list will be published at the program webpage <https://elearning.unimib.it/course/view.php?id=46152> and at the University program webpage <https://www.unimib.it/graduate/data-science>.

In any case, the Commission responsible for the evaluation must return the overall outcome of the assessments as soon as possible, no later than 14 October 2022.

Starting from the days following the publication of admitted students list, it will be possible to proceed with enrolment in the program.

### **CFU transfer and recognition modalities**

In case of transfer, the student can request recognition of training credits acquired in the previous course of study. Recognition is carried out by a special commission, appointed by the Teaching Coordination Council, on the basis of the conformity between the contents of the course of origin and those of the course to which one wishes to access. Partial recognition of a course is allowed.

In case of transfer of the student from another master's degree program belonging to the LM Data - Data Science class, the number of credits relating to the same scientific-disciplinary sector, directly recognized to the student, cannot be less than 50% of the credits already gained (according to the Ministerial Decree of 16 March 2007).

In the A.Y. 2022/2023 the transfer to second year of the Master's degree program in Data Science LM Data - Data Science class) is not allowed.

It is possible to recognize the professional knowledge and skills certified individually as university training, as well as skills acquired in post-secondary level training activities where the university has contributed for a maximum of 12 CFU, overall between bachelor's and master's degrees. This recognition is subject to the approval of the competent bodies. Activities already recognized for the

purposes of attributing university credits within bachelor's degree programs cannot be recognized again as credits for master's degree programs.

Information regarding the modalities for submitting transfer applications is published at the webpage: <https://www.unimib.it/servizi/segreteria-studenti/passaggi-trasferimenti-e-rinunce>.

Students who intend to make an incoming transfer/passage must comply firstly with the indications provided by the admission modalities of the master's degree course in Data Science (LM Data - Data Science class) available on the webpage: <https://elearning.unimib.it/course/view.php?id=46143>.

### **Organization of didactic activities**

The teaching activities are organized into course lessons. A course normally includes lectures, exercises and laboratory activities for which the following correspondences apply:

1 CFU of frontal lectures: 7-8 hours;

1 CFU of exercises: 10 - 12 hours;

1 CFU of laboratory activities: 9 - 12 hours.

The CFU represents the student's learning work, including the training activities implemented by the Master's degree program and the commitment reserved for personal study or other individual training activities. 1 CFU corresponds to 25 hours of total work, distributed between hours of lessons, laboratories and individual study.

### **Frequency**

Attendance is mandatory for at least 75% of the laboratory hours, with the possibility of individual exemption for justified justification.

Attendance at lectures and exercises is not mandatory, but is highly recommended.

### **Lesson times, office hours and contact details of the course teachers**

Teaching activities are scheduled over two semesters:

#### 1° semester

- start of lessons: 03 October 2022
- end of lessons: 15 January 2023

#### 2° semester

- start of lessons: 27 February 2023
- end of lessons: 11 June 2023

Lessons schedule will be published at the webpage <https://gestioneorari.didattica.unimib.it/PortaleStudentiUnimib/?view=home&include=homepage&lang=en>

Professors' contacts are published at the webpage <https://en.unimib.it/people-search>.  
Concerning hours at the office to meet the professors, please contact them by email.

## Courses syllabus

The teaching programs ("syllabus") and other useful information on the organization of teaching activities can be consulted at the following web page <https://elearning.unimib.it/course/index.php?categoryid=9172&lang=en> "Courses".

## Study plan presentation

The study plan is the set of compulsory training activities, compulsory activities chosen from within a list of proposed courses and teaching activities freely chosen by the student in accordance with the teaching regulations of the master's degree program.

The students are automatically assigned a study plan upon enrollment in the first year, which constitutes the statutory study plan. Subsequently, the students must present their own study plan with an indication of the compulsory and freely chosen activities.

The study plan is approved by the Teaching Coordination Council. The methods and deadlines for submitting the plan are defined by the University.

The student's right to take verification exams relating to a teaching activity is subject to the presence of the activity itself in the last approved study plan. For anything not covered, please refer to the University Regulations for students.

More information on the webpage <https://www.unimib.it/servizi/segreteria-studenti/piani-degli-studi> .

## Exams modalities

The courses are structured in two semesters as established by the teaching calendar. For each course there are 5 exam sessions, distributed between June-July, September, January-February. The validity of the exam program is limited to the academic year in which the course is provided.

Each course corresponds to an exam which involves the acquisition of the credits attributed to the course. A course can include multiple modules which give rise to a single integrated exam. The exams give rise to an evaluation out of thirty. The exams can be oral and/or written. Partial intermediate exams valid for passing the exam may be scheduled during the course.

Details on the method of verification and evaluation of each individual course included in the study plan are available in the course syllabus available on the e-learning site of the Degree Course under the heading "COURSES" <https://elearning.unimib.it/course/index.php?categoryid=9172>

Registration for exams is mandatory and takes place online <https://s3w.si.unimib.it/Home.do>

The calendar of exam dates is shown in the public section (you must access it WITHOUT logging

in) "Exam notice board" of the website [https://s3w.si.unimib.it/ListaAppelliOfferta.do?menu\\_opened\\_cod=menu\\_link-navbox\\_didattica\\_Esami](https://s3w.si.unimib.it/ListaAppelliOfferta.do?menu_opened_cod=menu_link-navbox_didattica_Esami) and in the web agenda which can be consulted on the following webpage <https://gestioneorari.didattica.unimib.it/PortaleStudentiUnimib/?view=home&include=homepage&lang=en>

### **Supernumerary “extra” credits (11 May 2020 Academic Senate approval)**

In derogation of the provisions of the art. 22 paragraph 3) of the University Didactic Regulations in force, the Academic Senate, with approval dated 11 May 2020, has provided also for students enrolled in master's degree courses, the possibility of including activities in supernumerary up to 16 ECTS in their study plan, starting from the 2019/2020 academic year.

The 16 extra credits can be acquired through the recognition of exams taken for teaching purposes, in Erasmus or through transversal activities offered by the University.

The credits and the grades obtained for the additional courses are not included in the calculation for the average of the exam grades, but they are recorded in the student career and will be reported in the Diploma Supplement.

**For the 2 year teaching activities that will be activated in the A.Y. 2023-2024, please refer to the Didactic Regulation of the Master's degree of the A.Y. 2022-2023.**

### **Contacts**

Master's degree program site: Department of Computer science, Systems and Communication (Abacus U14 building), Viale Sarca, 336 – 20126 Milan

President of the Teaching Coordination Council: prof. Andrea Maurino.

Other reference teachers of the Master's degree program: prof. Claudio Ferretti (traineeship referent), prof. Gianluca Della Vedova (Didactic Commission president), prof. Elisabetta Fersini (International mobility coordinator), prof. Marco Viviani (orientation referent).

Teaching Secretariat office - Sciences:

[segreteria.didattica@disco.unimib.it](mailto:segreteria.didattica@disco.unimib.it)

[orientamento.datascience@unimib.it](mailto:orientamento.datascience@unimib.it)

Master's degree program websites:

<https://elearning.unimib.it/course/index.php?categoryid=9172>

<https://www.unimib.it/graduate/data-science>

For further information, please refer to the Academic Regulations for the academic year of enrollment which can be consulted on the web page <https://elearning.unimib.it/course/view.php?id=46143>