UNIVERSITA' DEGLI STUDI DI MILANO
PROGRAMME DESCRIPTION - ACADEMIC YEAR 2025/26
MASTER DEGREE
Cognitive Sciences and Decisional Processes
Enrolled untin 2023/24 Academic Year

HEADING	
Degree classification - Denomination and code:	LM-55 Cognitive sciences
Degree title:	Dottore Magistrale
Curricula currently available:	
Length of course:	2 years
Credits required for admission:	180
Total number of credits required to complete programme:	120
Years of course currently available:	2nd
Access procedures:	Cap on student, student selection based on entrance test
Course code:	K03

PERSONS/ROLES

Head of Study Programme

Prof.ssa Ilaria Cutica

Tutors - Faculty

Per la mobilità internazionale e Erasmus:
prof.ssa Alessandra Gorini

Per i piani di studio, riconoscimento crediti e trasferimenti
prof.ssa Chiara Guglielmetti

Per l'orientamento e la tesi di laurea:
prof.ssa Ilaria Cutica

Degree Course website

https://sco.cdl.unimi.it/it

Academic Office for the Degree Programme

Email: scienzecognitive@unimi.it

CHARACTERISTICS OF DEGREE PROGRAMME

General and specific learning objectives

In line with the goals envisaged by its degree class (LM-55 Cognitive Sciences), the Master's degree programme in Cognitive Sciences and Decisional Processes aims to provide students with cutting-edge multidisciplinary expertise in cognitive sciences, by also covering psychological, philosophical, neuroscientific, methodological and technological aspects. Notably, students will acquire theoretical and practical knowledge enabling them to fully understand cognitive processes and to analyse and manage individual and group decision-making processes in complex contexts. The study plan includes a set of core activities that cover the basics of cognitive sciences, plus other courses focusing on more specific aspects, such as decision-making mechanisms in healthcare and neurocognitive aspects of decision making. In view of the growing connection between cognitive sciences and technology, the programme also has courses that explore how new technologies are being integrated into state-of-the-art systems to support human decision-making, human-machine interaction and the analysis of health data, which are now more numerous and complex than ever.

Expected learning outcomes

(based on the Dublin descriptors used in the European Higher Education Area)

Knowledge and understanding

The programme is framed to provide students with a thorough understanding of mind sciences, and with knowledge and skills to understand human behaviour in numerous contexts. In particular, students will be introduced to cognitive and behavioural processes involved in decision-making, communication, human interactions and the emergence of conflicts: this

theoretical foundation is essential to develop a mindset conducive to the study of human actions and their ethical and moral implications. Moreover, students will investigate the central nervous system both from a physiological and neuro-psychological perspective, in order to learn the vocabulary and research methods of neuroscience. They will become familiar with technologies and artificial intelligence, so as to be able to interpret technological interfaces and to design new tools to support decision-making and cognitive processes. Lastly, they will be introduced to research methodology, which will provide them with adequate tools to understand and manage quantitative data, in order to develop models for the interpretation of specific decision-making contexts and/or to design intervention strategies. Students? knowledge and understanding will be assessed in a variety of ways, depending on the characteristics of each course. For certain subjects, written exams are preferred ? either with open-ended questions or a mix of closed-ended and open-ended questions ? and may be combined with an oral interview aimed at assessing reasoning skills. For other subjects, oral exams are the most suitable form of assessment.

Applying knowledge and understanding
Students will develop the necessary skills to investigate how mental processes influence judgement-making, decision-making and communication and negotiation processes in everyday life and business contexts (with a particular focus on the healthcare sector). As a result, they will be able to translate the theoretical models learnt in class into practical and operational models, mostly in the field of applied cognitive sciences. By examining medical case studies and producing reasoned writing, students will learn to apply their theoretical knowledge in the area of healthcare and social services, as well as in all those fields where neuroscience can provide a truly valuable contribution (research, science dissemination, project management, advanced training). Through decision-making exercises, students will acquire the ability to evaluate situations where the risk of error is high, in order not only to develop strategies for preventing errors or critical events, but also to identify the cause of past errors and implement error-management strategies. Students? ability to apply knowledge and understanding will be assessed during exams, in particular oral exams; to this end, students may also be required to write an essay and present it at the oral exam.

Making judgements
Graduates should be able to autonomously collect data pertaining to specific professional situations requiring decision making, and to professionally interpret them with a critical eye, by identifying the grounds and analysing the generative, conservative and transformative dynamics of such decision making, as well as by describing and/or anticipating consequences. Students? analysis skills should also be aimed to solve criticalities, by optimising individual and group reasoning and decision-making processes. Students? ability to make judgements will be assessed by way of written and/or oral exams.

Communication skills
Graduates in Cognitive Sciences and Decisional Processes should be able to convey information correctly and with scientific rigour (also in English) in order to write business or academic reports and, more generally, to communicate the results of their work and their operational proposals both in business and academic settings. They should also master IT communication tools and have an understanding of processes and methods to manage communication effectively. Lastly, they should have acquired relationship skills for the workplace, including the ability to work in team and in international contexts. Students? communication skills will be assessed by way of written and/or oral exams.
Learning skills
Graduates in Cognitive Sciences and Decisional Processes should have acquired not only the necessary knowledge and skills to obtain their final degree, but also adequate learning methods and the right motivation to pursue continuous improvement and autonomous lifelong learning. Students? learning skills will be assessed by way of written and/or oral exams.

Professional profile and employment opportunities
Experts in cognitive sciences and decision making
Job function
Graduates in Cognitive Sciences and Decisional Processes will be equipped to work as experts in the following areas: quality and safety management of production processes; business decision analysis (with a focus on the healthcare sector); clinical risk analysis; planning and implementation of basic and applied research projects that require expertise in cognitive sciences (project management); corporate training; management of interdisciplinary teams; analysis of cognitive and organisational processes leading to errors or organisational dysfunctions.

Professional skills
Graduates in Cognitive Sciences and Decisional Processes will be able to analyse and plan interventions aimed at improving the quality and appropriateness of decisions and reduce the risk of error. Thanks to the interdisciplinary nature of the programme, which combines the study of neuroscience and applied cognitive sciences, graduates will be able to apply their knowledge in various fields, including the analysis and management of cognitive, emotional and creative processes, the analysis of human-machine interaction, the design of learning pathways based on the use of advanced technological tools, the management of organised systems and the study of complex environments.
Moreover, they will be equipped with operational tools to manage clinical risk and to implement business process improvement strategies aimed at reducing the risk of error, boosting organisational resilience, tackling the complexity of healthcare data while using them in full compliance with ethical standards, and utilizing technology as a tool to support health-behaviour decision-making processes.

Employment opportunities
Graduates in Cognitive Sciences and Decisional Processes can work as freelance professionals and consultants for public or private entities, notably:
- research centres;
- companies;
- hospitals;
- public administrations;
- training centres.

Graduates will acquire the knowledge and skills needed to pursue further studies, for example PhD programmes. Starting from the study of intelligent systems (either natural or artificial), they will be able to apply their knowledge of cognitive sciences by using simulation, observation and experimental methods to verify scientific hypotheses.
The programme will also provide graduates with the skills needed to carry out research on the analysis and development of systems that mimic human cognitive processes, as well as on the design of interfaces and ergonomic systems.
The programme trains graduates for the following professions (codes in brackets refer to the classification of occupations by ISTAT, the Italian National Institute of Statistics):
- human resources specialists (2.5.1.3.1)
- specialists in public relations and corporate identity and related professions (2.5.1.6.0)
- experts in the planning of curricular and learning pathways (2.6.5.3.2)

Initial knowledge required

The course is subject to an enrolment cap pursuant to Law no. 264/1999.
The number of available spots is set each year by the designated academic bodies, based on the resources (facilities, personnel, and equipment) available for the programme. Admission into the programme is based on an assessment intended to verify the student's baseline knowledge and educational background. The admission test consists of a written, multiple-choice exam intended to gauge the student's ability in terms of logical reasoning, reading comprehension (in Italian), logic, general biology, introductory statistics, and general psychology.
Detailed information on the bibliography and format of the admission test will appear on the Call for Applications, and be posted to:
https://sco.cdl.unimi.it/it/iscriversi.

Students who have obtained a degree in one of the following classes (and those who hold an equivalent degree from a foreign institution which has been deemed sufficient) are eligible to apply:
- L-2 Biotechnologies;
- L-5 Philosophy;
- L-20 Communication Sciences;
- L-24 Psychology Theory and Practice;
- L-SNT/1 Healthcare professions, nursing, and midwifery sciences;
- L-SNT/2 Rehabilitative Healthcare;
- L-SNT/3 Health Professions of Technical Sciences;
- L-SNT/4 Health Professions of Prevention Sciences;
- LMG-01 Law;
- LM-13 Pharmacy and Industrial Pharmacy;
- LM-41 Medicine and Surgery;
- LM-46 Dentistry and Prosthetics.

Students enrolled in one of these programmes with an expected graduation date prior to the deadline set each year by the Academic Senate will likewise be eligible to apply.

Students holding a degree in a different class (as well as those holding a foreign degree deemed equivalent) may also be considered for admission if they have earned at least 30 academic credits (30 CFU) from any combination of the following subject areas (SSD):
First group:
M/PSI-01, M/PSI-02, M/PSI-03, M/PSI-04, M/PSI-05, M/PSI-06, M/PSI-07, M/PSI-08;
Second group:
M/FIL-01, M/FIL-02, M/FIL-03, M/FIL-04, M/FIL-05;
Third group:
SPS/01; SPS/02; SPS/03; SPS/04; SPS/05; SPS/06; SPS/07; SPS/08; SPS/09; SPS/10; SPS/11; IUS/01; IUS/02; IUS/03; IUS/04; IUS/05; IUS/06; IUS/07; IUS/08; IUS/09; IUS/10; IUS/11; IUS/12; IUS/13; IUS/14; IUS/21; SECS-S/01; SECSS/02; SECS-S/03; SECS-S/04; SECS-S/05; SECS-S/06;
Fourth group:
INF/01; MAT/01; MAT/02; MAT/03; MAT/04; MAT/05; MAT/06; MAT/07; MAT/08; MAT/09;
Fifth group:
BIO/09; BIO/16; BIO/17; BIO/18; MED/01; MED/03; MED/09; MED/25; MED/26; MED/42; MED/45; MED/47; MED/48.

Likewise required is English-language proficiency at or above the B1 Level as defined by the Common European Framework of Reference for Languages (CFER).
Level B1 proficiency will be verified by the University of Milan Language Centre (SLAM) at the admissions stage in one of the following ways:
- a language certificate, obtained within three years prior to the date of submission, at a B1 level or higher (for the list of language certificates recognised by the University, please visit:
https://www.unimi.it/en/node/297/). Certificates must be uploaded during the admissions process;
- English-language proficiency acquired through a SLAM course completed during a Bachelor's degree programme. Certificates issued within the past four years are considered acceptable. The programme office will run an internal check in those cases - students are not required to submit their certificates;
- placement test, administered by SLAM: https://www.unimi.it/en/node/297/.
Those who have neither submitted a valid certificate, nor demonstrated a sufficient proficiency, will be required to take a language-proficiency test during the admissions process.
Should a student fail to take, or fail to pass, the language-proficiency test, they will be given until 31 December 2021 to complete and submit a recognised certificate to SLAM.
Should the student fail to complete the requirement by 31 December, they will not be permitted to enrol in the Master's degree programme, nor to sit any later test.

Likewise required is Italian-language proficiency at or above the B1 Level as defined by the Common European Framework of Reference for Languages (CFER).
Level B1 proficiency will be verified by the University of Milan Language Center (SLAM) at the admissions stage in one of the following ways:
- a language certificate, earned within three years prior to the date of submission, at a B1 level or higher (for the list of language certificates recognised by the University, please review:
https://www.unimi.it/it/studiare/competenze-linguistiche/test-e-corsi-di-italiano). Certificates must be uploaded during the admissions process;
- placement test, administered by SLAM: https://www.unimi.it/it/studiare/competenze-linguistiche/test-e-corsi-di-italiano.
Those who have neither submitted a valid certificate, nor demonstrated a sufficient proficiency, will be required to take a language-proficiency test during the admissions process.
Those who have earned the required academic credits, and demonstrated the requisite knowledge and ability, and with a high enough position on the national ranking (subject to the enrolment cap) will be admitted into the Master's degree programme.
Any student who has not taken the admission test will not be permitted to enrol in the Master's degree programme, nor to sit any future tests.

Compulsory attendance

Attendance is not mandatory for courses, however it is strongly recommended.

Degree programme final exams

The Master's Degree in Cognitive Sciences and Decisional Processes (SCO) will be awarded to those who pass a final exam.
The final exam (to which 18 academic credits are allocated), consists of presenting and defending an original thesis, prepared by the student under the guidance of a supervisor. Students selecting the "Applied cognitive neuroscience" track must write their thesis in English, and their thesis discussion will also be held in English.

Campus

Most lectures will be held in downtown Milan, and generally at the Academic Center located at Santa Sofia 9/1.

EXPERIENCE OF STUDY ABROAD AS PART OF THE TRAINING PROGRAM

The University of Milan supports international mobility by providing its students with the opportunity to spend study and internship periods abroad. It is a unique chance to enrich your educational path in a new exciting environment.

The agreements entered into by the University with over 300 universities from the 27 EU member countries under the European Erasmus+ programme allow regularly enrolled students to carry out part of their studies at one of the partner universities or to undertake internships at companies, training and research centres and other organizations.

Similar international mobility opportunities are provided outside Europe, through agreements with a number of prestigious institutions.

Study and internships abroad

The Degree in Cognitive Science and Decision Making Processes has always developed a big interest in internationalization, defining exchange programs with various European universities. At present, active exchange programs involve University of Porto, Paris (Università Paris VI, Istitute Jean Nicod - Ecole Normale Supérieure and master in cognitive science COGMASTER)and Maastricht. Thanks to the Erasmus Program, students can attend courses, internship, exams, and sometimes the elaboration of the thesis in different cultural context compared with the Italian one.
Students of the Degree in Cognitive Science and Decision Making Processes can plan their Erasmus during the first or the

second year with a duration of 3, 6 and 9 month supported by a grant.
Foreseen training during the period of study must be approved by the responsible of the Erasmus program of each degree course. All the proposed activities (agreed with foreign university through learning agreement) are compatible with the foreseen study plan and enable to collect the required CFU.
Grades obtained by the student in the other European Countries are converted using the ECTS (European Credit Transfer System) table. The recognition in career is 20 CFU for 3 months stay, 30 CFU for 6 month and 60 CFU for 9 month.

The Double Degree program
Besides the Erasmus exchange programs, the University of Milan has stipulated a Double Degree conjoint agreement with the University of Maastricht (The Netherlands) which involves the Master in Cognitive Science and Decision Making Processes (University of Milan) and the Master of Science in Psychology (University of Maastricht). Such a program offers to the students of the biennium the possibility to spend the first year at the University of Milan, acquiring knowledge and basic skills and then to specialize in their specific area of interest attending the second year by the partner (host) University. Once obtained the established academic requirements by both universities, students of the Double Degree receive both the Laurea Magistrale in Cognitive Science and Decision Making Processes and the graduate degree (usually Master of Science) from the partner institution.

How to participate in Erasmus mobility programs
The students of the University of Milan can participate in mobility programmes, through a public selection procedure.
Ad hoc commissions will evaluate:
• Academic career
• the candidate's proposed study programme abroad
• his/her foreign language proficiency
• the reasons behind his/her application

Call for applications and informative meetings
The public selection for Erasmus+ mobility for study generally begins around February each year with the publication of a call for applications specifying destinations and requirements. Regarding the Erasmus+ Mobility for Traineeship, the University of Milan usually publishes two calls a year enabling students to choose a destination defined by an inter-institutional agreement or to find a traineeship position on their own.

The University organizes informative meetings to illustrate mobility opportunities and rules for participation.

Erasmus+ scholarship
The European Union grants the winners of the Erasmus+ programme selection a scholarship to contribute to their mobility costs, which may be supplemented by the University funding for disadvantaged students.

Language courses
Students who pass the selections for mobility programmes can benefit from intensive foreign language courses offered each year by the University Language Centre (SLAM).
https://www.unimi.it/en/node/8/

Learn more at https://www.unimi.it/en/node/274/

For assistance, please contact:
International Mobility Office
Via Santa Sofia 9 (second floor)
Tel. 02 503 13501-12589-13495-13502
Contacts: InformaStudenti; mobility.out@unimi.it
Student Desk booking through InformaStudenti

1st COURSE YEAR (disactivated from academic year 2025/26) Core/compulsory courses/activities common to all curricula

Learning activity	Ects	Sector
	9	ING-INF/05
Anatomical-physiological bases of the cognitive processes	9	(6) BIO/09, (3) MED/26
Cognitive psychology	9	M-PSI/01
Cognitive research methodology	9	M-PSI/01
Ethical issues of decision-making processes in biomedicine	6	M-FIL/02
Psychology of decisions	9	M-PSI/01
Total compulsory credits	51	

Further elective courses common to all curricula			
English proficiency B2 (3 ECTS)		3	ND
End of course requirements common to all curricula			
Final Exam		18	NA
	Total compulsory credits	18	

ACTIVE CURRICULA LIST

APPLIED COGNITIVE NEUROSCIENCE Course years currently available: 2nd
Decisions in social-economic and educational fields Course years currently available: 2nd

CURRICULUM: [K03-A] APPLIED COGNITIVE NEUROSCIENCE

2nd COURSE YEAR Core/compulsory courses/activities Curriculum-specific features APPLIED COGNITIVE NEUROSCIENCE			
Learning activity		**Ects**	**Sector**
Advanced cognitive psychology		6	M-PSI/01
Artificial intelligence and decision making for health and medicine		6	INF/01
Cellular and molecular basis of cognition in health and diseases		12	BIO/14
Neuroethics		6	M-FIL/03
Neurotechnology and innovation in therapeutics		6	BIO/14
	Total compulsory credits	36	

CURRICULUM: [K03-B] Decisions in social-economic and educational fields

2nd COURSE YEAR Core/compulsory courses/activities Curriculum-specific features Decisions in social-economic and educational fields			
Learning activity		**Ects**	**Sector**
Bioethics of Emerging Technologies in Healthcare		6	M-FIL/02
Clinical risk management and its implication in legal and insurance field		9	(3) MED/45, (3) MED/43, (3) MED/42
Decision-Making Processes in Groups		6	M-PSI/05
Persuasive technology and E-health		6	M-PSI/05
Use of Data in Medical Decisions		9	(6) MED/08, (3) MED/06
	Total compulsory credits	36	