

POLITECNICO DI MILANO



Academic Year 2017/18

School of Design

Degree Programme of:

Design & Engineering

Laurea Magistrale (Equivalent To Master Of Science)

Milano Bovisa Campus

1. General Information

School	School of Design
Code Reference Law	1091
Name	Design & Engineering
Reference Law	Ordinamento 270/04
Class of degree	LM-12 - Design
Degree level	Laurea Magistrale (Equivalent To Master Of Science)
First year of activation	2010/2011
Official length of the programme	2
Years of the programme already activated	1,2
Official language(s)	English
Campus	Milano
Dean of the School	Luisa Maria Virginia Collina
Coordinator of the Study programme	Matteo Oreste Ingaramo
Website of the School	http://www.design.polimi.it
Website of the Study programme	--

Student Office (Study programme)

Reference office	Centro Orientamento Studenti Scuola Design
Address	Via Candiani 72, 20158 Milano
Phone	02 2399 7277

Central Student Office

Address	VIA LAMBRUSCHINI, 15 (MI)
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2. General presentation of the study programme

The School of Design has been running a number of level II educational programmes for some years now as well as its continuation Laurea Magistrale in order to enhance the Politecnico di Milano's educational programme.

The Industrial Product Laurea Magistrale (equivalent to Master in Science), henceforth referred to for the sake of brevity as Design & Engineering, responds to growing demand for designers integrating design world type skills with engineering know-how. These professionals are called on to manage the complexities of the creative, design and implementation process for large scale consumer products within global decision-making and manufacturing mechanisms. The product industry is, in fact, markedly trans-national and draws on skills and know-how from countries capable of ensuring project quality, innovation ability and the use of sustainable materials and advanced technologies.

In this scenario Milan and Italy are crucibles of front rank professionals in the field of design and international centres of excellence. The Politecnico di Milano, always an expression of multi-disciplinary culture capable of integrating the various 'polytechnic' strengths, is perhaps the Italian university with the highest levels of integration between the design and engineering worlds.

The Laurea Magistrale in Design & Engineering programme is an example of this having emerged from synergies between a range of subject areas notably Design (Department of Design, School of Design), Mechanical Engineering (Department of Mechanics, School of Industrial and IT Design) and Materials Engineering (the "Giulio Natta" Department of Chemistry, Materials and Chemical Engineering, School of Industrial and IT Engineering).

The Laurea Magistrale programme aims to integrate the various cultures to train internationally avant-garde design professionals. Professionals of this sort - with unique characteristics in the Italian educational system - are of especial value in the industrial product job market with a markedly global character requiring an ability to adapt to an international working environment.

In the world of design and industrial production, the Politecnico di Milano's Design & Engineering Laurea Magistrale programme aspires to become an unrivalled educational attraction and visiting card both nationally and internationally.

3. Learning objectives

General programme description

The Design & Engineering Laurea Magistrale programme is designed to train professionals combining design culture with technical-engineering skills capable of designing and developing industrial products in expressive and material terms and technical-operational and manufacturing process management aspects.

Over the course of this two year programme students thus study how to:

- _Develop a complete design project from the starting point of the product concept, through definitive design and implementation, to the drawing up of product specifications;
 - _Select materials and working technologies and manage the life cycle (with special attention to environmental considerations);
 - _Acquire and apply design methodologies in virtual environments;
 - _Assess and manage the design implications of the technological aspects of manufacturing systems.
- On completion of the Design & Engineering Laurea Magistrale programme students will be trained professionals in the following areas:
- _Industrial Design, User centered design and interaction;
 - _Industrial Process and Production, Product Development;
 - _Materials, Technologies and life cycles;

Representation and prototyping.

Industrial Design, Industrial Process and Production

Students will be supplied with the tools and methods required to manage the value chain in aspects related to innovation in industrial design and related processes. From the starting point of a design and concept brief, students will be provided with the methods and tools required for integrated product-process design as well as appropriate understanding and management of the design, programming and process monitoring phases which support the product and component production cycle (with special attention to integrated production systems). Fundamentally important themes are technological research for innovation, integration between product and process design, production in distributional contexts, return production, integration between processes and the systems that make them, evolutionary system management and quality management.

Materials, Technologies and life cycles

Students will be provided with know-how and operational abilities in the materials and surfaces contexts and their working technologies integrating engineering with design cultures by means of in-depth and conscious understanding of the relationships between structure and physical-mechanical properties and sensory, perceptual and emotional type functions. The study and design of new application potential in relation to operational behaviour is in fact one of the fundamental principles in the production of pleasant, attractive and at the same time practical and functional products requiring understanding and management of the interaction between product materials, contexts and use quality. Simultaneous assessment and planning relating to material and product life cycles in production, working, withdrawal and recycling is also of fundamental importance.

Representation and prototyping

Students will be provided with the tools required in the design and formation of digital prototype process understood as simulations of real production objects and industrial design interiors in all their aspects (formal, functional and structural). In addition to three dimensional parametric modelling, the methodologies and techniques of reverse modelling and virtual prototyping, i.e. 3D model building techniques as design media will be studied as well as virtual visualisation techniques such as perceptual, numerical and functional simulation media and 3D data acquisition in form and colour as feedback media.

All mechanics courses including the optional

Teaching Models

The programme involves front-of-class theory teaching integrating creative design and product development methodologies in the laboratory context on up-to-date technological, process and use themes.

Students from a range of three year laurea courses requires teaching courses in the first year of the Laurea Magistrale considered of fundamental importance in bringing students to the same level.

Front-of-class teaching in the second year is designed to provide students with the specific techniques required in definitive project development and implementation in addition to in-depth study on design culture (optional courses and humanities studies).

The Laurea Magistrale programme comprises three design laboratories focusing on applying the skills acquired in theory teaching and design and engineering integration.

4. Organization of the study programme and further studies

4.1. Structure of the study programme and Qualifications

For every level one Laurea course the School also sets up a related continued study Laurea Magistrale.

Level I Laurea	Level II continued study laurea
Product design	Integrated Product Design
Communication Design	Communication Design
Fashion Design	Design for the Fashion System
Interior Design	Interior and Spatial Design
Product design	Design & Engineering
Mechanical Engineering	
Material and Nanotechnology Engineering	
Product Design/Communication Design/Interior Design/Fashion Design	Product Service System Design
Product Design/Communication Design/Interior Design/Fashion Design	Digital and Interaction Design
Interior Design/ Product Design (Product)	Yacht & cruising vessel design- La Spezia campus

The Laurea Magistrale courses activated by the School of Design are divided up into sections.

Laurea Magistrale in Integrated Product Design Taught in both the Italian and English languages	Active in both the 1st and 2nd years of the Laurea Magistrale <i>Product Section 1 - IP1</i> <i>Product Section 2 - IP2</i>
Laurea Magistrale in Communication Design Taught in both the Italian and English languages	Active in both the 1st and 2nd years of the Laurea Magistrale <i>Communication Section 1 - C_1</i> <i>Communication Section 2 - C_2</i> <i>Communication Section 3 - C_3</i>
Laurea Magistrale in Design for the Fashion System Taught in the English language	Active in both the 1st and 2nd years of the Laurea Magistrale <i>Fashion Section 1 - M_1</i> <i>Fashion Section 2 - M_2</i>
Laurea Magistrale in Interior and Spatial Design Taught in both the Italian and English languages	Active in both the 1st and 2nd years of the Laurea Magistrale <i>Interiors Section 1 - IS1</i> <i>Interiors Section 2 - IS2</i> <i>Interiors Section 3 - IS3</i>
Laurea Magistrale in Design & Engineering Taught in the English language	Active in both the 1st and 2nd years of the Laurea Magistrale <i>D&E Section 1 - DE1</i> <i>D&E Section 2 - DE2</i>
Laurea Magistrale in Product Service System Design Taught in the English language	Active in both the 1st and 2nd years of the LM <i>Product Service System Section 1 - PS_1</i> <i>Product Service System Section 2 - PS_2</i> From the 2nd year of the LM the following section will also be active <i>Section Product Service System 2 - PS_3</i> Only for students studying on the Double degree with Management Engineering project.

Laurea Magistrale in Digital and Interaction Design Taught in the English language	At the 1st year only one section is active Second year not active
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N.b. Course teaching can be in mixed Italian and English.

4.2. Further Studies

The qualification grants access to "Dottorato di Ricerca" (Research Doctorate), "Corso di Specializzazione di secondo livello" (2nd level Specialization Course) and "Master Universitario di secondo livello" (2nd level University Master)

5. Professional opportunities and work market

5.1. Professional status of the degree

Laurea Magistrale in Design & Engineering career outcomes are in design fields requiring designers capable of liaising with process engineers, prototyping designers, simulation designers and project leaders, i.e. designers with a global vision of product life cycle and designers with expertise in materials in the industrial sectors.

5.2. Careers options and profiles

Reference professionals work in the following fields:

1. Designers capable of liaising with process engineers: typical skill areas are industrial designers in the manufacturing and marketing contexts within predefined production cycles, industrial product implementation, technology and industrial cycle and retail product distribution designers.
2. Prototyping designers: typical applications are digital and/or physical prototyping, component design from the starting point of CAD assisted three-dimensional modelling, development of engineered models by means of geometric, mechanical and technological know-how indispensable in the shift to implementation with numerical control machinery (CAM) of model surfaces and volumes, defining working technologies and material transformation for the purposes of the industrial implementation of objects designed and modelled.
3. Simulation designers: typical applications are manufacturing cycle simulation, technological, formal and construction characteristic simulation of products with specific ergonomic performance requirements.
4. Materials and material life cycle designers: capable of selecting the most suitable materials and surfaces to give projects specific surface and material functional, tactile, colour and even aroma qualities which are increasingly crucial factors in 'made in Italy' product competitiveness (furniture, cars, textiles, accessories, packaging, etc.) paying great attention to environmental values linked to product life cycles.
5. Project leaders: i.e. senior designers with a global vision of product design cycles, production, retail distribution and withdrawal capable of co-ordinating those responsible for concept and design and material selection and process development liaising with marketing and retail departments and capable of bringing the entire product development process to completion without losing touch with conceptual continuity.

Surveys of University Assessment Commission

https://aunicalogin.polimi.it/aunicalogin/getservizio.xml?id_servizio=204&idApp=1&idLink=4205

6. Enrolment

6.1. Access requirements

Laurea (First degree), or foreign comparable degree

Candidate admission is dependent on assessments of merit and of the contents of previous courses of study. Students from other campuses or dissimilar study programmes will be required to undergo assessment of their educational background in order to identify any supplementary courses of study which may be required before admission to the Laurea Magistrale study programme.

Qualifications required for admission:

- Level I or II laurea;
- Appropriate English languages skills certification.

Updates to the “*Guida all’ammissione alla Laurea Magistrale*” are published every year on the School's site including detailed information on the material required for admission applications, how to register and deadlines, admission without assessment and reasons for non admission.

Minimum laurea marks required for admission are also shown.

Students requiring supplementary studies prior to admission must fulfil these within one year of the date of assessment.

6.2. Requested knowledge

Students can be admitted to the Laurea Magistrale in either the first or the second semester (only students coming from similar courses or who have fulfilled supplementary educational requirements relating to the assessment semester will be eligible for admission to the 2nd semester). Available places on the 2nd semester will be published after September admissions procedures are complete.

The Laurea Magistrale in **Design & Engineering** accepts students for 2nd semester admission **only if they have completed the following courses in the 1st semester:** *Product development design studio 1* and *C.I. Design Materials* as individual courses. The Study Programme Board (CCS) will assess whether students have fulfilled their laboratory requirements and effectively attended the course including in subsequent exam sessions.

English language fluency, according to the standards indicated by the university, is a registration pre-requisite. **Certificates must be presented before the assessment registration deadlines.**

Students applying for admission to the Laurea Magistrale must fill in the appropriate online form and will be eligible for admission only if their previous studies fulfil course requirements as assessed by the appropriate board whose decision is final. In the event that students are rejected the board will provide reasons for its decision.

To be eligible for admission to the Laurea Magistrale course students must have level a I level Laurea in category L-4 Industrial Design or another Laurea or equivalent Italian or foreign qualification judged suitable. Candidates' prior educational studies will in any case be assessed and any supplementary studies required will subsequently be assigned.

School of Design students fulfilling NV requirements (parameters relating to student averages and credits awarded in the second year of the course) are exempt from the need to supply support documents to online applications.

Assessment is required for:

- internal and external Politecnico di Milano students without the parameters cited above;
- internal and external graduating students at Politecnico di Milano who have obtained at least 150 ECTS when their applications are presented.

The following students are not eligible for access to the School of Design's Laurea Magistrale programme:

- students who have graduated from the Politecnico di Milano's School of Design with marks of **85/110** or lower;
- students who have graduated from the Politecnico di Milano's and are external to the School of Design with marks of **90/110** or lower;
- students who have graduated from other Italian universities with marks of **95/110** or lower;

N.b. Students who have **graduated** from the Politecnico di Milano's School of Design and Laurea in Engineering with marks of **85/110** or lower are not eligible for admission to the Inter-School Laurea Magistrale in Design and Engineering.

Students who fulfilled admission requirements in previous academic years but did not register for the programme will be required to conform to the new parameters when presenting new assessment applications.

Candidates will be assessed in accordance with the parameters set out in the “Laurea Magistrale Programme Admissions” document available for consultation on the www.design.polimi.it site. Fulfilment of assessment requirements will be notified to candidates by the board in two forms: admission without supplementary educational requirements or admission with supplementary educational requirements.

In the latter cases enrolment will be complete only when the required supplementary educational requirements have been fulfilled. These supplementary requirements must be fulfilled within one year of the date of assessment. Such students can supplement their studies by enrolling on individual courses and Magistrale taught courses to a maximum of 32 ECTS.

For admissions to the 2nd semester for students with supplementary educational requirements relating to the 1st semester, candidates will be required to reapply for the subsequent

To check your supplementary educational requirements consult the Laurea Magistrale Programme Admissions document on the School www.design.polimi.it site.

In addition to educational course assessments, candidates' curricula and other educational or extra educational activities will be subjected to comparative evaluation.

The board can also require written and/or oral tests.

The School reserves the right to accept individual course requirements for single topic and optional courses (note that for admission purposes no more than 32 Laurea Magistrale related ECTS can be recognised).

Students fulfilling NV criteria will be guaranteed admission to one of the Laurea Magistrale programmes selected but not necessarily their first choice depending on availability of places. Supplementary educational requirements can also be required where students are applying to transfer from one Laurea Magistrale course to another in dissimilar fields.

Detailed information relating to admission and enrolment is available on the Guidance and Counselling Office site https://aunicalogin.polimi.it/aunicalogin/getservizio.xml?id_servizio=204&idApp=1&idLink=4549

The educational offer at the Politecnico di Milano

https://aunicalogin.polimi.it/aunicalogin/getservizio.xml?id_servizio=204&idApp=1&idLink=4985

6.3. Deadlines

Places available for admissions:

- **Design & Engineering LM**(Milan campus): 90

of which 35 are reserved for non EU students including 10 Chinese students on the “Marco Polo” project.

For the Laurea Magistrale admission time frames check the Laurea Magistrale Programmes Admissions Guide and the 2016/17 academic calendar.

For the deadlines related to the admission to the Laurea Magistrale, verify the academic rules and the academic calendar 2015/16.

How to become a student at Politecnico di Milano

https://aunicalogin.polimi.it/aunicalogin/getservizio.xml?id_servizio=204&idApp=1&idLink=4311

6.4. Tutoring and students support

The School has supplemented its information and guidance services for future students with the purpose of providing information on the teaching and educational contents of its programmes of study and clarifying future students educational objectives and potential career openings.

For students who are already enrolled at the School guidance activities designed to:

- help students remove any obstacles to their attendance and learning with initiatives tailored to individual student needs, attitudes and requirements;
- encourage a more active participation by students in the educational process.

A reference teacher/tutor has been selected for each study programme and he or she is the official reference point for any School guidance. The service is programme of study specific and deals in particular with:

- support services for students who require help in solving problems or clarifying concepts;
- approval and publishing texts relating to the presentation of laurea courses it represents;
- identification of student projects from each specific laurea course to be used as guidance tools at Open Days and on the School's official communication channels.

G u i d a n c e a n d C o u n s e l l i n g O f f i c e

https://aunicalogin.polimi.it/aunicalogin/getservizio.xml?id_servizio=204&idApp=1&idLink=3767

Polinternational

https://aunicalogin.polimi.it/aunicalogin/getservizio.xml?id_servizio=204&idApp=1&idLink=4280

7. Contents of the study Program

7.1. Programme requirements

To be eligible for the final examination of Laurea Magistrale, students must:

- To have accomplished 120 credits required in Level II of the Master including the credits related to the Internship and the credits of the final examination.
- To have developed an individual thesis under the guidance of a tutor, which can be either a projectable work, a theoretical-methodological deepening, or a historical/critical analysis.

The final examination of the Laurea Magistrale consists in the discussion of the individual thesis which must be written under the direction of the official teacher, thesis supervisor.

For more information on this subject refer to Regolamento Esame di Laurea Magistrale published on the School website.

7.2. Mode of study

The Laurea Magistrale course is full time activity. It is characterized by many different didactical activities: Monodisciplinary Courses are characterized by theoretic contents communicated by means of ex cathedra lessons and verified throughout the year with tests and interviews.

Integrative Courses cover more than one discipline or specific context, and are taught by two teachers who supplement one another.

Experimental Workshops are taught in the workshops, where the students are given an opportunity to experiment and use the tools used in design professions.

Design Studios involve both a number of internal teachers employed by the Faculty and several external professionals and feature design activities where the students work under the guidance of a team of teachers, each contributing with his or her expertise as related to the subject of the design.

Design Seminars (workshop) are of a duration of one week during which the students develop a project under the guidance of an established and well-known professional or a company.

Erasmus Program and the other international mobility projects enable the students to spend six months studying abroad, at qualified European and non-European design universities.

Professional Apprenticeship enable the student to work with a company or design studio that collaborates with the Polytechnic, under the guidance of a tutor of the Faculty and a tutor appointed by the company.

Conclusive Design Studio represents a complete design experience, linking numerous disciplinary contributions and guiding the students in the choice and development of their Dissertation.

The System Regulations require a series of educational activities (specialist, elective or supplementary) which are present in the course of study in the form of single subject and integrated courses and Design studio in which the Laurea Magistrale's educational content is conveyed.

In addition to these types of educational activities the System Regulations also require that a specific number of credits are attributed to types of activity which can be categorised as follows:

- educational activities chosen independently by students (Optional courses);
- educational activities relating to preparation for the final exams required for the qualification to be awarded and foreign language assessment (Final exam and Language);
- activities designed to enable students to gain additional language skills, IT, telematic and relational skills which will help them in finding employment as well as educational activities designed to facilitate professional choices by giving students direct experience of working in the sector which the qualification can gain them access to including, in particular, educational work experience and guidance (Internships).

Below is a demonstration of the main characteristics of these activities.

Optional student courses

In the Laurea Magistrale programme 12 credits are awarded to optional courses (equivalent to one course per year).

Students are required to choose their optional courses on presentation of their first year study plans. Similarly when they present their second year study plans they will be required to choose a second course.

The optional courses take place in both 1st and 2nd semesters. Internships - Laurea Magistrale

In Laurea Magistrale students carry out an internship at a company, professional studio, study centre, body, etc. with a partnership agreement with the Politecnico di Milano which fulfils the requirements of current legislation specifying that, on completion of the agreed internship

period (minimum 250 hrs, maximum 1 year) a certificate will be issued.

Such internships can be incorporated into students' study plans in either the 1st or the 2nd year of study depending on the organisation of the student's course of study.

Internship is an educational experience which gives students real experience of the world of work. The host company must be aware of and agree to the legal regulations and the need for educational support and the student must accept and show an ability to respect the company's rules and behaviours.

For additional information on how to draw up a study plan, educational priorities, attendance requirements and exam sessions, etc., you are advised to consult the document "Implementing Norms for Educational Regulations" available for consultation on the School's site.

7.3. Detailed learning objectives

Students' ability to choose the courses and credits to be incorporated into their study plans is subordinate to a series of rules imposed by the School which makes available an educational programme worth 60 credits for each year of the course (nominal courses).

Each year students can choose courses for a different number of credits than that specified by the nominal courses (60 ECTS per year) to graduate their study programmes according to their needs.

The minimum number of credits a student can enrol on is 30 unless the number of credits needed for course completion are fewer than this.

The maximum number of credits a student can enrol on is 80, respecting exam priorities.

The current framework of the study plan requires the course exam sequence to be respected as shown in the Regulations.

Courses designed for later years of the programme cannot be inserted into an earlier year study plan ("advance study") unless all previous and current year courses have also been integrated into it.

The School has also implemented an exam priority sequence on the basis of which certain courses can only be enrolled on if other, introductory courses have already been passed. Students may actually be able to enrol on fewer credits than is nominally the case as a result of this rule.

The System Regulations require a series of educational activities (specialist, elective or supplementary) which are present in the course of study in the form of single subject and integrated courses and Design studio in which the two-year Laurea Magistrale's educational content is conveyed.

Laurea Magistrale

In addition to these types of educational activities the System Regulations also require that a specific number of credits are attributed to types of activity which can be categorised as follows:

- educational activities chosen independently by students (Optional courses);
- educational activities relating to preparation for the final exams required for the qualification to be awarded (Final exam);
- activities designed to enable students to gain additional language skills, IT, telematic and relational skills which will help them in finding employment as well as educational activities designed to facilitate professional choices by giving students direct experience of working in the sector which the qualification can gain them access to including, in particular, educational work experience and guidance (Internships).

1 Year courses - Track: DE1 - DE1

Code	Act type	SSD	Course Title	Language	Sem	Credits (CFU)	CFU Group
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093202	B	ICAR/13 ING-IND/15	PRODUCT DEVELOPMENT DESIGN STUDIO 1	EN	1	12.0	12.0
093192	B	ICAR/13	PRODUCT DEVELOPMENT DESIGN STUDIO 2	EN	2	12.0	12.0
097928	B	ICAR/13 L-ART/03	DESIGN FUNDAMENTALS	EN	2	6.0	6.0
099896	B	ING-IND/14 ING-IND/16	DESIGN & MANUFACTURING	EN	2	6.0	6.0
097926	B	ICAR/13 L-ART/03	DESIGN THINKING AND PROCESSES	EN	1	6.0	6.0
Courses defined on the not diversified (***) program, common to all specialization options							






1 Year courses - Track: DE2 - DE2

Code	Act type	SSD	Course Title	Language	Sem	Credits (CFU)	CFU Group
093202	B	ICAR/13 ING-IND/15	PRODUCT DEVELOPMENT DESIGN STUDIO 1	EN	1	12.0	12.0
093192	B	ICAR/13	PRODUCT DEVELOPMENT DESIGN STUDIO 2	EN	2	12.0	12.0
097928	B	ICAR/13 L-ART/03	DESIGN FUNDAMENTALS	EN	2	6.0	6.0
099896	B	ING-IND/14 ING-IND/16	DESIGN & MANUFACTURING	EN	2	6.0	6.0
097926	B	ICAR/13 L-ART/03	DESIGN THINKING AND PROCESSES	EN	1	6.0	6.0
Courses defined on the not diversified (***) program, common to all specialization options							

1 Year courses - Track: DE3 - DE3

Code	Act type	SSD	Course Title	Language	Sem	Credits (CFU)	CFU Group
093202	B	ICAR/13 ING-IND/15	PRODUCT DEVELOPMENT DESIGN STUDIO 1	EN	1	12.0	12.0
093192	B	ICAR/13	PRODUCT DEVELOPMENT DESIGN STUDIO 2	EN	2	12.0	12.0
097928	B	ICAR/13 L-ART/03	DESIGN FUNDAMENTALS	EN	2	6.0	6.0
099896	B	ING-IND/14 ING-IND/16	DESIGN & MANUFACTURING	EN	2	6.0	6.0
097926	B	ICAR/13 L-ART/03	DESIGN THINKING AND PROCESSES	EN	1	6.0	6.0
Courses defined on the not diversified (***) program, common to all specialization options							

1 Year courses - Track: *** - offerta comune

Code	Act type	SSD	Course Title	Language	Sem	Credits (CFU)	CFU Group
093410	--	--	 [METAINS] LABORATORIO DI SVILUPPO PRODOTTO 1/ PRODUCT DEVELOPMENT DESIGN STUDIO 1		1	12.0	12.0
093430	--	--	 [METAINS] LABORATORIO DI SVILUPPO PRODOTTO 2/ PRODUCT DEVELOPMENT DESIGN STUDIO 2		2	12.0	12.0
097926	--	--	 DESIGN THINKING AND PROCESSES		1	6.0	6.0
097928	--	--	 DESIGN FUNDAMENTALS		2	6.0	6.0
099896	--	--	 DESIGN & MANUFACTURING		2	6.0	6.0
091907	C	ING-IND/22	NANOTECHNOLOGY AND FUNCTIONAL MATERIALS FOR DESIGN	IT	2	6.0	6.0 (Grp. Opz.)
091909	B	ING-IND/14	THE COMPLETE ELEMENT METHOD FOR ANALYSIS OF INDUSTRIAL PRODUCTS	IT	2	6.0	
052003	B	ING-IND/15	VIRTUAL AND PHISICAL PROTOTYPING	EN	2	6.0	
094864	B	ING-IND/15	REVERSE MODELING	IT	1	6.0	

099929	B	ING-IND/16	ADDITIVE MANUFACTURING	EN	1	6.0	
097927	B	ICAR/13	PARAMETRIC REPRESENTATION METHODS	IT	1	6.0	
096168	C	ING-IND/22	MATERIALS SELECTION CRITERIA IN DESIGN AND ENGINEERING	IT	1	12.0	12.0 (Grp. Opz.)
093436	C	ING-IND/22	MATERIALS SELECTION CRITERIA IN DESIGN & ENGINEERING	EN	1	12.0	
096157	B	ING-IND/13	MECHANICAL PROJECTING BASIS	IT	1	6.0	6.0 (Grp. Opz.)
093199	B	ING-IND/13	MECHANICAL DESIGN	EN	1	6.0	

2 Year courses - Track: DE1 - DE1

Code	Act type	SSD	Course Title	Language	Sem	Credits (CFU)	CFU Group
097931	B	ICAR/13 ING-IND/14 ING-IND/16	FINAL PROJECT WORK	EN	1	18.0	18.0
097930	B	M-FIL/05	SEMIOTICS	EN	1	6.0	6.0
Courses defined on the not diversified (***) program, common to all specialization options							

2 Year courses - Track: DE2 - DE2

Code	Act type	SSD	Course Title	Language	Sem	Credits (CFU)	CFU Group
097931	B	ICAR/13 ING-IND/14 ING-IND/16	FINAL PROJECT WORK	EN	1	18.0	18.0
097930	B	M-FIL/05	SEMIOTICS	EN	1	6.0	6.0
Courses defined on the not diversified (***) program, common to all specialization options							

2 Year courses - Track: *** - offerta comune

Code	Act type	SSD	Course Title	Language	Sem	Credits (CFU)	CFU Group
097931	--	--	m FINAL PROJECT WORK		1	18.0	18.0
097932	B	ICAR/13	FINAL EXAMINATION	EN	2	9.0	9.0
099930	B	ICAR/13	INTERNSHIP	EN	1	15.0	15.0 (Grp. Opz.)
099931	B	ICAR/13	INTERNSHIP	EN	2	15.0	
097930	--	--	m SEMIOTICS		1	6.0	6.0
091907	C	ING-IND/22	NANOTECHNOLOGY AND FUNCTIONAL MATERIALS FOR DESIGN	IT	2	6.0	6.0 (Grp. Opz.)
091909	B	ING-IND/14	THE COMPLETE ELEMENT METHOD FOR ANALYSIS OF INDUSTRIAL PRODUCTS	IT	2	6.0	
099929	B	ING-IND/16	ADDITIVE MANUFACTURING	EN	1	6.0	
052003	B	ING-IND/15	VIRTUAL AND PHYSICAL PROTOTYPING	EN	2	6.0	
094864	B	ING-IND/15	REVERSE MODELING	IT	1	6.0	
097927	B	ICAR/13	PARAMETRIC REPRESENTATION METHODS	IT	1	6.0	

7.4. Foreign language

Foreign language assessment will be carried out in accordance with the university's methods as set out on the "Student Services/Guides and Regulations/Guide to the English Language" web page www.polimi.it.

Students are encouraged to read this document carefully and respect the norms set out in it. Specifically, note that: "Pursuant to Ministerial Decree 270/04 the Politecnico di Milano has adopted the English language as the European Union language which students must speak in addition to Italian".

English language fluency, according to the standards indicated by the university, is a registration pre-requisite. For admission to the **School of Design Laurea Magistrale Programme certificates must be submitted by candidates within the time frames for admission applications. This deadline must be respected by all students (from similar or different courses)**

I n f o r m a t i o n o n E n g l i s h l a n g u a g e f l u e n c y

https://aunicalogin.polimi.it/aunicalogin/getservizio.xml?id_servizio=204&idApp=1&idLink=3860

Language courses

https://aunicalogin.polimi.it/aunicalogin/getservizio.xml?id_servizio=204&idApp=1&idLink=4342

7.5. Degree examination

Pursuant to Ministerial Decree 270/04, article 11, subsection 5 the final exam for the LM in Interior Design consists of the preparation of a thesis by students under the guidance of a supervisor.

The thesis must be experimental and original and can lead to design or theoretical and historical-critical outcomes. In both cases theses must contain a methodological foreword illustrating its disciplinary foundations, arguments and the knowledge framework within which the research in it has been carried out and show which elements constitute original contributions by the candidate.

The thesis must be written and discussed in Italian and have an English language abstract.

For wholly English sections theses can be drawn up, presented and discussed in English alone.

The thesis must complete the student's educational course of study. It must be an individual work which can, however, be based on structured activities carried out together with other students. The individual candidate's contribution must, however, be clearly recognisable in the final outcome.

For information on the Laurea Magistrale Exam and Thesis writing procedures you are advised to consult the "Laurea Magistrale Exam Regulations" published on the School's site

Information concerning general rules and regulations, session calendars, registration and consignment of theses is available at

https://aunicalogin.polimi.it/aunicalogin/getservizio.xml?id_servizio=204&idApp=1&idLink=4373

8. Academic calendar

The Laurea Magistrale programme calendar is structured into two semesters and students can enrol at the beginning of either semester. Thus studies can begin in either the first or the second semester of each academic year. The course is structured in order to enable students to complete the programme in four semesters whether first year Laurea Magistrale enrolment takes place in the first or second semesters.

An exam period takes place at the end of each semester (exam).

Academic calendar

https://aunicalogin.polimi.it/aunicalogin/getservizio.xml?id_servizio=204&idApp=1&idLink=4404

9. Faculty

The names of the Programme of Study teachers and what they teach will be made available on the degree programme from September onwards.

The Degree Programme is published each year on the Politecnico di Milano's website.

The names of the teaching staff who will be teaching on the programme with their CVs are published on the university site by year and study programme.

10. Infrastructures and laboratories

Design Laboratories

The creation of large scale laboratories supporting design education is coherent with the Politecnico di Milano School of Design's tradition of experimentation, its inductive teaching model, in which 'knowledge' and 'know-how' are mutually supportive.

The purpose of these laboratories is the practice of activities which allow students to verify their design hypotheses and learn how to use the technical tools required for experimentation, representation and design communication.

The laboratories managed by the Design Department occupy an approximately 10,000 square metre space in the Milan Bovisa campus.

The Politeca, an integrated documentation system for design research, is an integral part of the laboratories.

For details on the laboratories

<http://www.dipartimentodesign.polimi.it/laboratori/i-laboratori>

www.politeca.polimi.it

11. International context

Building an international dimension for the School of Design has been one of its priority objectives since it was founded in the year 2000.

There are many reasons for this: the nature of design which inherently draws its very lifeblood from its multicultural and multi-local character, its proximity to both the world of manufacturing - which has now taken on a global dimension - and the sphere of consumption whose dynamics and tendencies are visible in a range of local specific contexts; the very DNA of the design community which has always been international; Milan's acknowledged status as design capital, a crucible for designers from all over the world who have come here to study or open a studio; the desire to make educational trajectories increasingly permeable to impulses deriving from this stimulating context as in other dynamic foreign contexts. For the School of Design internationalisation has a two-fold meaning: supporting student (and teaching and technical staff) mobility outwards and the opposite, attracting students, researchers, professors and visiting professors into the Politecnico from abroad. In relation to these two internalisation channels (dealt with separately, the first in this chapter and the second in the subsequent chapter) the School of Design has committed itself in recent years to enlarging its international contact network and it now works with 300 design universities the world over in Erasmus exchange programmes (with 150 European universities), bilateral exchange projects (with 70 non European universities), joint workshops with other schools, international internships and so on.

To these should be added more highly structured activities which aim to consolidate partnership relationships in the educational and research fields with a number of selected universities. This is the case of the MEDes_Master of European Design training for excellence programme (with 7

university partners) in addition to the many international research programmes under way. The School of Design is a member of Cumulus, a network of International design schools, and of the main international design associations. Like the city which hosts it - Milan is a veritable international design laboratory - the Politecnico's School of Design aims to be a meeting place between different cultures, between education, industry and the professions, in which professors, entrepreneurs and celebrated designers from all over the world take an active part in the students' educational experience.

12. Internationalization

International exchanges

The School of Design takes part in international student exchange programmes which offer students the opportunity to go abroad for a period of study at one of the Politecnico's partner universities. A list of the School's partner universities is available on the Politecnico's website and on the School of Design website in the Internationalisation Area.

The Erasmus Programme

The Erasmus programme was set up in 1987 by the European Community to give students the chance to carry out a period of study at a foreign university within the European Union from 3 to 12 months legally recognised by their own university, at Bachelor or Master level.

In 2014 the European Union's Erasmus+ programme was set up for education, training, youth and sport in the 2014-2020 period.

Specifically Erasmus for study enables university students to carry out a period of study at a university with a partnership agreement with their own university. This mobility can entitle students to a grant (under the conditions set out in the international mobility tender) and free registration at the host university. Students can thus follow courses and take exams at the partner university and have the exams recognised at their own universities.

Bilateral exchanges

The School of Design has also activated a number of bilateral agreements with non EU universities. These are mainly intended for the use of Laurea Magistrale students and can also be applied for by those who have already carried out an Erasmus period abroad during their three year study course. The procedures for admission to such exchanges are the same as those for Erasmus exchanges with the exception of the study scholarship which is not guaranteed in such cases.

The bilateral agreement, in fact, enables students to attend a period of study abroad at a partner university without incurring registration fees at such universities. In some cases, however, a management fee for exchange students is payable (e.g. Orientation fee).

Master of European Design (MEDes) In the 2002/2003 academic year a specific 5 year programme was set up at the School of Design.

This international study programme, promoted and designed by the school together with a further five prestigious European design universities and formalised in an agreement signed by all university partners, entitles students to an additional qualification on top of the Laurea Magistrale granted by the Politecnico di Milano. Students can graduate only from their own universities.

In addition to the Politecnico di Milano the universities taking part in this programme are:

The Glasgow School of Art, *Glasgow, Scotland*

Aalto University, School of Arts, Design and Architecture, *Helsinki, Finland*

Konstfack University College of Arts, *Stockholm, Sweden*

Ensci Les Ateliers, *Paris, France*

KISD - Köln International School of Design, *Cologne, Germany*

Universidade de Aveiro, *Aveiro, Portugal*

5 students are selected for this programme of excellence from all those enrolled on the 2nd year of the Laurea programmes in Industrial Product Design, Interior Design and Communication Design. Candidates for the MEDes programme carry out two study periods at two partner universities:

- _one in the 3rd year of the level I Laurea;
- _the other in the 1st year of the Laurea Magistrale.

The choice of university will be made on the basis of student preferences and the Board of MEDes.

DOUBLE DEGREE laurea

The School of Design has set up a number of Double Degrees at Master level

These programmes entitle students to a double Laurea Magistrale title issued by the Politecnico di Milano and its partner school on completion of a common programme involving an exchange.

Master Theses can be drawn up, presented and discussed in English.

Thesis abroad

Students in the 2nd year of Laurea Magistrale program may develop a part of their thesis abroad. This can be done in the following ways:

- through the Erasmus program and/or Bilateral exchange outside Europe including specific courses in the Study Plan, agreed on with your supervisor, that are useful to the development of your thesis or with a co-supervisor from the partner university depending on availability, who co-ordinates with your supervisor at the School of Design.
- with co-supervision from the other university, organized autonomously and without joining an exchange program. In this case the student must communicate his/her intentions in advance to the Relé office of the School of Design, which will formalize the procedure.
- Applying to the Public Call from Politecnico to have a scholarship for doing the thesis abroad.

In-course Internship/job placement

The in-course internship envisaged for the 2nd year of the Laurea Magistrale may be carried out abroad by:

- applying to the **R.A.P** service (*Company and Professions relations*)
- *joining the Erasmus/extra UE programmes, if available in the partner schools, or by activating a collaboration with professional practices, or through attending courses (design studio based) or workshop as per the same amount of hours.*
- *Answering to the Call “Erasmus for Traineeship” to obtain scholarships to make the internship within the European Union.*
- Making the internship within the exchange mobility substituting it with project courses that amount at least 250 hours.

Information on exchange programmes, double degree projects and international internships, European research and international relations projects are available at

https://aunicalogin.polimi.it/aunicalogin/getservizio.xml?id_servizio=204&idApp=1&idLink=4699

13. Quantitative data

No contents for this section.

14. Further information

For any other information the students are invited to visit the School website, in particular the teaching regulations of the academic rules.

15. Errata corrige

No contents for this section.

BONZA