

# **Internal Double Degree (Intake 2020/21) Management Engineering and Product-Service System Design**

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## **1. Enrolment**

### **1.1 Entry requirements**

The Management Engineering and Product-Service System Design Double Degree is open to 20 students selected from Management Engineering Master of Science and Product-Service System Design Degree programmes (10 students from each programme).

May Apply to participate in the Double Degree Project in Engineering Management and Product-Service System Design (School of Design) within the deadlines and with the rules defined in this Call, the students of the Politecnico di Milano enrolled for the academic year 2020/2021 in the first year (and first semester regarding students Product Service System):



Prerequisite for the students in Product-Service System Design (School of Design) is the achievement of the 1<sup>st</sup> year Design Studios. Students admitted to the Double Degree Project which in July 2021 resulted not in compliance with the 1st year Design Studios, cannot continue in this Double Degree Project;

Applications for the Internal Double Master of Science degree may be submitted, in compliance with the rules set out in this Teaching Regulation <https://www.polimi.it/en/programmes/laurea-magistrale-equivalent-to-master-of-science/>, by students of the Politecnico di Milano enrolled in:

- Master of Science (equivalent to Laurea Magistrale) Programme in Product-Service System Design (School of Design);
- Master of Science (equivalent to Laurea Magistrale) Programme in Management Engineering (Industrial Engineering and IT School)

Hence, **students enrolled in “individual” courses (equivalent to Corsi Singoli) cannot apply to the Double Master of Science Degree in Management Engineering - Product-Service System Master of Science Design.**

To apply for the Double Master of Science degree, students should fulfil the admission requirements outlined in the Teaching regulations of each study course <https://www.polimi.it/en/programmes/laurea-magistrale-equivalent-to-master-of-science/>

- Master of Science (equivalent to Laurea Magistrale) Programme in Product-Service System Design
  - Master of Science (equivalent to Laurea Magistrale) Programme in Management Engineering - Stream: DMI – Design Management, Innovation and Entrepreneurship
- 1.2 Articulation of the selection process and general criteria used for students’ selection**
- Students from Politecnico di Milano interested in applying for the Internal Double Master of Science degree in Management Engineering – Product-Service System Design, have to participate in the call published on the School’s websites. The call is accessible through **On Line Services Applications form**→ **Selection procedures**→ **and upload the following documents:**

List of the documents required:

- A motivation letter where the candidates describes the reasons for the application in the Double Degree and the contribution that they will offer to the community of the project;
- Academic CV of the Bachelor Degree obtained at other universities, with self-declaration of transcripts with marks and the final degree grade;
- Personal CV outlining skills and extra-bachelor experiences (portfolio of projects, work experiences, workshops and summer schools, etc.) and that highlights experience and skills acquired consistent with the second degree;
- A portfolio of projects (final thesis as well as additional projects undertaken in other courses or workshops) if the applicant is from the School of Design;



- An extended abstract of the final thesis/overview of the Business Game experience if the applicant is from the School of Engineering.

The project portfolio must not exceed 10 MB.

The extended abstract of the final thesis must not exceed 5 standard Word pages.

An evaluation Committee composed by professors appointed by the Study Course of Product Service System Design and the Study Course of Management Engineering, will be in charge of the candidates' selection process.

The Committee will make a first evaluation of the academic background, the motivation letter and the CV of the candidate and will assign up to 70 points as follows:

- Motivation letter, up to 20 points assigned;
- Academic CV of the Bachelor Degree obtained at other universities, with self-declaration of transcripts with marks and the final degree grade, up to 20 points assigned;
- Personal CV, up to 15 points assigned;
- Project portfolio (for the Design School) or thesis (for the Industrial Engineering and IT School), up to 15 points assigned.

Candidates who are assigned **at least 60 points** will be interviewed individually.

The same Committee will do a second evaluation based on an individual interview that will assess:

- The extent to which the Double Degree is consistent with the candidate's expectations and motivations;
- The extent to which the objectives of the Double Degree are consistent with the specific skills acquired by the candidate during the Bachelor's Degree and through other curriculum experiences;
- The extent to which the candidate is motivated to acquire knowledge in the areas covered by the Double Degree in particular with respect to the second degree (evaluated via questions during the individual interview and the development of a case study).

The one-to-one interview will be assigned **a maximum of 30 points** by the Evaluation Committee

The interview is considered as passed with an assessment **of at least 20 points.**

The final score assigned of each applicant - in terms of ranking - will be equal to the sum of the two scores

### **1.3 Main deadlines and time-frame**

The deadlines of the selection process will be published on the Course websites (at <https://www.ingindinf.polimi.it/en/didattica/translate-to-english-offerta-formativa/translate-to-english-doppie-lauree-interne>)



and at

<https://www.design.polimi.it/en/teaching/educational-offer/internal-double-degrees>

This year, the call for applications will follow this timeline:

- Presentation of candidate applications: by December 14<sup>th</sup>, 2020 at 12.00 (noon)
- Notification of the results of the screening stage: December 21<sup>st</sup>, 2020
- Selection process and interviews: between January 15<sup>th</sup> and 17<sup>th</sup>, 2020
- Publication of the final results: by January 26<sup>th</sup>, 2021
- Acceptance by candidates: from January 26<sup>th</sup> to February 3<sup>rd</sup>, 2021

The duration of the Internal Double Degree programme is at least six semesters for a total of 180 CFUs

## 2 Withdrawals

Students must send their withdrawals to the following e-mail addresses:

- School of Design students: [doppielaureeinterne-scdes@polimi.it](mailto:doppielaureeinterne-scdes@polimi.it)
- Management Engineering students: [management-engineering@polimi.it](mailto:management-engineering@polimi.it)

Students applying to the Double Degree may apply for ASP (Alta Scuola Politecnica), the Erasmus and international mobility programmes. **However, if students are selected for both programmes, they must withdraw from one of them as per the relevant procedures and timeframes.**

Any delay in communicating withdrawal from the Double degree programme will seriously affect replacement candidates and cause administrative difficulties.

Students who undertake the Double degree programme and decide to finish their studies after completing only one of the degrees must present a new study plan detailing a change in curriculum/PSPA (previously approved study plan), within the established deadlines.

## 3. Admitted candidates

Starting from the A.Y. 2020/21 candidates, who have formally accepted to participate to the Internal Double Degree, will have to attend a compulsory study plan which cannot be changed. The list of the exams of the programs are listed on the current Educational Rules of the two programs

## 4. Tuition fees

Details will be published on the University websites: <https://www.polimi.it/en/current-students/tuition-fees-scholarships-and-financial-aid/student-contribution/categories-of-exemption-provided-by-politecnico/>



## 5. Data Treatment

Pursuant to EU Regulation no. 679/2016, candidates are informed that the processing of personal data supplied by them during the assessment for participation in internal Double Degree projects procedure or otherwise acquired for this purpose by the Politecnico di Milano is aimed solely at carrying out the assessment activities for the assignment the activities and will be carried out by the persons in charge, including the examining commission, at the Politecnico di Milano, using also computerized procedures, in the ways and within the limits necessary to pursue the aforementioned purposes, even in the case of possible communication to third parties. The provision of such data is necessary to verify the requirements for participation and the possession of securities and their failure may include such verification. The data will be stored, in accordance with the provisions of current legislation, for a period of time not exceeding that necessary to achieve the purposes for which they are processed.

The candidates are recognized the rights referred to the third chapter of EU Regulation no. 679/2016, in particular, the right to access their personal data, to request correction, updating and cancellation, if incomplete, erroneous or collected in violation of the law, as well as to oppose their processing for legitimate reasons by addressing requests to the person responsible for the protection of personal data, contact point: [privacy@polimi.it](mailto:privacy@polimi.it). Data controller: Politecnico di Milano –General Management, Piazza Leonardo da Vinci 32, 20133 Milan.

Milan 17<sup>th</sup> November 2020

The Dean of the School of Industrial and Information Engineering

Prof. Antonio Capone

The Dean of the School of Design

Prof. Luisa Collina



## **1. Professional profile**

### *1.1 Why this program is relevant for society and business? The Scenario*

In a world that is continuously changing, design and innovation are the main source of renewal and prosperity. They are necessary for society, to address the challenges of sustainability in a hyper connected and complex world; they are necessary for organizations and businesses, to create solutions that are valuable and to ensure long-term survival. They are necessary for people, as the exploration of the new is a major driver in their search for meaning.

Where innovation comes from in the current world? Technology of course is still a major driver. But is not enough anymore; both because technologies are increasingly accessible worldwide, and because the level of sophistication of technologies moves the focus from how technologies are developed to how they are chosen, integrated and used.

Innovation comes from the capability to capture the evolution of the context, to make sense of a complex environment, to combine the several opportunities that are today available, into an unprecedented vision. A vision that is made of powerful ecosystems of products, services, organizational processes, communication approaches, spaces, all integrated into a winning strategy and business model. The current scenario, in short, requires the capability to conceive, develop, and implement new visions that are both meaningful to people, and economically valuable for businesses.

These are multifaceted capabilities, based on two fields of competences:

- Design, as the set of capabilities that enable to envision new possibilities that are more meaningful to people. In particular, the design of ecosystems consisting of products, services, communication and space, i.e. what we call Product-Service-Systems Design
- Management, as the set of capabilities to transform the idea of a new ecosystem into a source of economic value and growth, by envisioning and implementing new business models.

The Double Degree in Management and Design aims at providing these capabilities, in a unique integrated courses.

### *1.2 What makes this program unique? A pioneering approach to Management and Design*

In the recent years, the fields of Management and Design have been in close interactions. On the one hand in the area of Design Management, i.e. the effective management of Design as a process and function. This has been a focus especially in the '80s and '90s, where major corporations needed to manage in an effective way their design units, and is still a relevant subject, since the management of creative processes and resources requires particular skills.



On the other hand, in the early 2000s the opposite dialogue as also occurred: using design as a way to practice management in a novel, more creative, way. This has promoted the use of Design Thinking in Business School, as a way to help managers to learn how to better understand users' needs and improve creativity. This is also a relevant subject, that at Politecnico di Milano has always been practiced, being our institution a university of Design ("Università del progetto"), which is the common trait of all our programs, from engineering to design, from architecture to management.

The uniqueness of this double degree in Management and Design is that it includes the previous perspectives, but it moves much beyond to address the challenges and opportunities of the new scenario of the next decades. This degree is not only the application of management to design, nor the application of design to management, but the joint combination of both perspectives to develop sophisticated solutions and business models that requires simultaneously the skills of designers and the skills of managers. There is no other similar approach or school that is internationally integrating the design of Product-Service-Systems and business models with this approach.

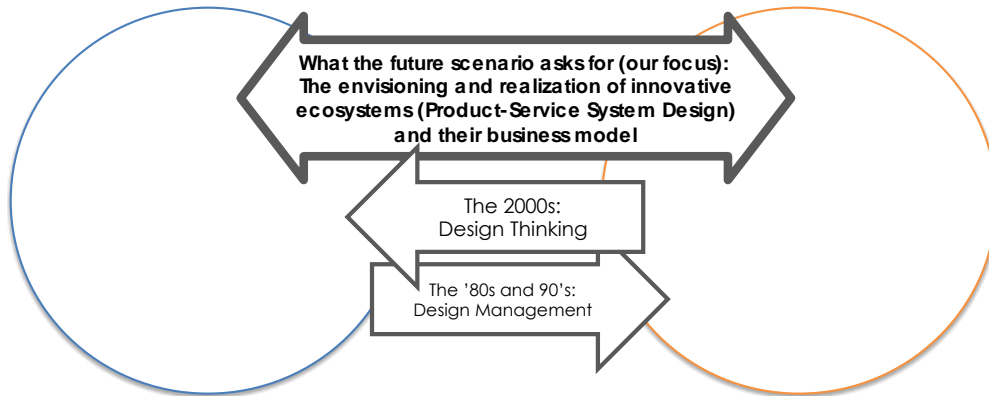
### *1.3 Why this program is essential for those interested in elevating design? What you get more if you are studying design*

Designers nowadays are not asked anymore to simply design products. They need to be capable to conceive sophisticated ecosystems, based on a combination of products, services, communication and spaces, all blended in an innovative business model. This requires not only design competences, but also advanced management skills. In fact, services are significantly based on organizational processes, and the design of business models requires a deep understanding of strategy, economy, and organizational networks, i.e. a deep understanding of management.

### *1.4 Why this program is essential for those interested in elevating management? What you get more if you are studying management*

Leaders nowadays are not asked anymore to simply manage processes and organizations. They need to be capable to innovate and change those processes and organizations. They need to be capable to make sense of complex market contexts, be empathic with people experiences, and create new solutions. This capability of envisioning new directions that are in line with people and society requires advanced design skills. In fact, design provides with the capability of making sense of society and of what people search for in life, and the capability of imagining the new.

## The scenario?



### 1.5 Who can I become? The expertise profile of the program

By attending this program, you will develop advanced skills for *Designing and Managing innovative ecosystems (products+services+communication+spaces) and business models*. More specifically, the following capabilities:

- to conceive innovative business models that create value for people and society
- to visualize and narrate those business models so that they can be effectively shared and communicated to other people in an organization, partners, stakeholders and, of course, customers.
- to create value for business, so that your vision is both good for the user and for the organization that creates it (its shareholders, its management and everyone contributing to it)
- to lead the development and implementation process, by engaging other players, so that your vision becomes realized and has a real impact in business and society

Typical jobs for this double degree may include for example professionals working in the following areas: strategy, innovation, marketing, branding, design, business development, project management, always with a strategic perspective.

Organizations that are interested in this profile include all organizations that have a strategy based on innovation, large and small, including start-ups. In the area of “for profit” businesses, but also in not-for-profit organizations.

### 1.6 Why a double degree? The advantage of being two.

The skills that we have described before cannot be achieved by a program that simply blend a little of design and a little of management. To envision and implement sophisticated ecosystems and business models one need to master both fields in depth. For this reason, instead of creating a separate program that takes a little





from both schools, we have decided to offer to a few selected talented and motivated students the chance to develop in depth both skills, in a clever and effective way.

This implies that you will really attend classes of design and classes of management. You will be immersed in both worlds, be in touch with other “pure design” students and professors and with “pure management” students and professors. You will thus absorb the way of thinking of both communities, instead of living into a separate world.

And also, being a program (and not an individual curriculum) you will go through this experience with a few other selected students like you. You will have therefore the chances to share, discuss, create a new culture of management and design with a few other likeminded pioneers and with the professors, managers and designers, who are engaged in this program.

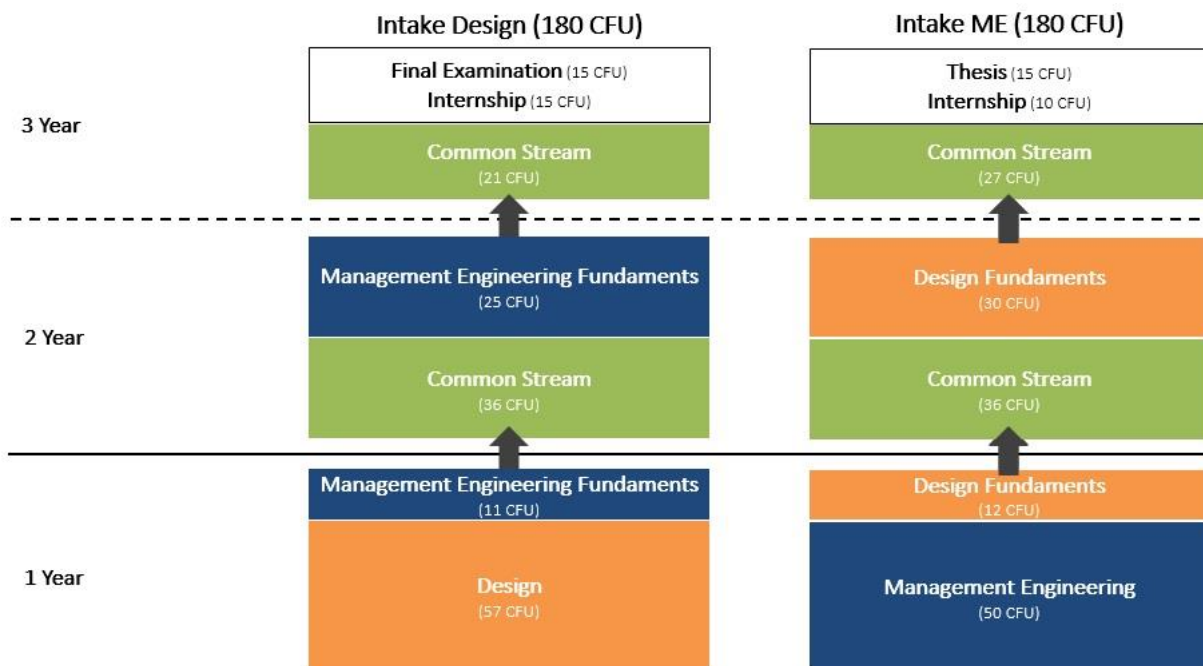
## 2. Study Plan

### a) General framework of the double degree

The double degree is founded on two Master of Science programs of Politecnico di Milano: the Program on Management Engineering (from the School of Management) and the Program on Product Service Systems Design. These are the two programs you will enrol.

You can start the double degree from one or the other according to your specific inclination and background: i.e. an intake from management or from design. This enable you to go deeper first in one of the two topics, then move to the other, and finally integrate them together.

The program therefore is organized as shown in the diagram below:



If you start with a focus on management, therefore you will:

- First develop the skills and thinking attitude of management, with basic courses from our Management School, ranging from Strategy, Marketing, Leadership, Innovation, Economics, Operations and Logistics, Accounting & Finance.
- Then you introduce a design dimension to management, with courses that integrate management and design (design strategy, management of design projects, brand management, business model design)
- Then deepen the skills in design of product-service-systems, with courses from our Design School, ranging from design methods and processes, design culture, design strategy, economics, innovation, user and social innovation, system design, sustainable design, the design of ecosystems and services, visualization and narration, in a blend of courses and design workshops.
- Finally, you conclude with activities where concepts you have learned along the program come together: design management lab, internship and thesis.

Similarly, if you start with a focus on design you will:

- First develop the skills and thinking attitude of design, with basic courses from our Design School, ranging from design methods and processes, design culture, user and social innovation, system design, sustainable design, the design of ecosystems and services, visualization and narration, in a blend of courses and design workshops.
- Then you introduce a management dimension to design, with courses that integrate management and design (design strategy, management of design projects, brand management, business model design)
- Then deepen the skills in management, with courses from our Management School, ranging from Strategy, Marketing, Leadership, Innovation, Economics, Operations and Logistics, Accounting & Finance.
- Finally, you conclude with activities where concepts you have learned along the program come together: design management lab, internship and thesis.

## **b) MOOC (COURSES)**

Students enrolled in the **Master of Science in Product Service System** and admitted to the Internal Double Degree - Management Engineering and Product-Service System Design, are required to pass, by the exam's session in February 2022 the on-line library Programmes included in the "Introduction to Management Engineering Series".

The following courses are compulsory:

- Fundamentals of Financial and Management Accounting (only if students have the course *Accounting, Finance and Control* in their study plan)
- Fundamentals of Organization



- Fundamentals of Economics

Students who don't have the course *Accounting, Finance and Control* in their study plan are required to pass one of following two courses, instead of Fundamentals of Financial and Management Accounting:

- Fundamentals of Operations
- Fundamentals of Strategy

Students enrolled in the **Master of Science in Management Engineering** (except for the bachelor level graduates in Management, Economics and Industrial Engineering) and admitted to the Internal Double Degree - Management Engineering and Product-Service System Design, must refer to the Management Engineering Degree

Programme:

<https://www.polimi.it/?id=6502&anno=2019&campus=Milano%20Bovisa&scuola=225&corso=479>

MOOC courses for students enrolled in both Master of Science programmes are provided free of charge through the Polimi Open Knowledge (POLIMI POK) platform (<https://www.pok.polimi.it/>).

**c) Detailed description of the study programme for the Intake Management (PSPA)**

[https://www4.ceda.polimi.it/manifesti/manifesti/controller/ManifestoPublic.do?evn\\_default=EVENTO&aa=2020&k\\_cf=222&k\\_corso\\_la=497&ac\\_ins=0&k\\_indir=\\*\\*\\*&lang=EN&tipoCorso=ALL TIPO CORSO&semestre=ALL SEMESTRI](https://www4.ceda.polimi.it/manifesti/manifesti/controller/ManifestoPublic.do?evn_default=EVENTO&aa=2020&k_cf=222&k_corso_la=497&ac_ins=0&k_indir=***&lang=EN&tipoCorso=ALL TIPO CORSO&semestre=ALL SEMESTRI)

First year courses A.A 2020/21 (unless changes are made in connection with the approval of the study manifesto)

SSD	Denominazione Insegnamento	Sem	ECTS	ECTS gruppo
ING-IND/35	Strategy & Marketing	1	10	10
ING-IND/35	Accounting, Finance and Control	1	10	10
ING-IND/17	Operations Management	1	10	10
ING-IND/35	Leadership and Innovation	2	10	10
ING-IND/35	Business and Industrial Economics	2	10	10
ICAR/13 L-ART/06	Visualization and Prototyping	2	6	6
M-PSI/01 ICAR/13	Service Design and Innovation	2	6	6
				<b>62</b>

Second year courses (PSPA PS3 – link PS2) A.A. 2021/22 (unless changes are made in connection with the approval of the study manifesto)

SSD	Denominazione Insegnamento	Sem	ECTS	ECTS gruppo
ING-IND/17	Logistics Management	1	10	10
ING-IND/35	Design Strategy	1	5	5
ING-IND/35	Economics of innovation	1	5	5
L-ART/03	History of Design	1	6	6
ICAR/13 M-DEA/01	Design methods	1	6	6
ING-IND/35	Management of Design and Innovation Projects	2	5	5
ING-IND/17 ING-IND/35	Digital Business Innovation	2	5	5
ICAR/13	Design Seminar	2	6	6
ICAR/12 ICAR/13	Product service system design studio – Service design	2	12	12
ICAR/13	System Design for Sustainability	2	6	6
				<b>66</b>

Third year courses A.A. 2022/23 (unless changes are made in connection with the approval of the study manifesto)

SSD	Denominazione Insegnamento	Sem	ECTS	ECTS gruppo
ICAR/13	Branding and Communication	1	6	6
ICAR/12	Professional Workshop	1	6	6
--	Internship	1	10	10
--	Thesis	1	5	15 Concatenati
--	Thesis	2	10	
ING-IND/35 ICAR/13	Design Management Lab	2	15	15
				<b>52</b>



- d) **Detailed description of the study programme for the Intake Product Service System Design**
- e) [https://www4.ceda.polimi.it/manifesti/manifesti/controller/ManifestoPublic.do?evn\\_default=EVEN TO&aa=2020&k\\_cf=222&k\\_corso\\_la=497&ac\\_ins=0&k\\_indir=\\*\\*\\*&lang=EN&tipoCorso=ALL TIPO\\_C ORSO&semestre=ALL SEMESTRI](https://www4.ceda.polimi.it/manifesti/manifesti/controller/ManifestoPublic.do?evn_default=EVEN TO&aa=2020&k_cf=222&k_corso_la=497&ac_ins=0&k_indir=***&lang=EN&tipoCorso=ALL TIPO_C ORSO&semestre=ALL SEMESTRI)

First year courses (PSPA PS1 or PS2) A.A. 2020/21 (unless changes are made in connection with the approval of the study manifesto)

SSD	Denominazione Insegnamento	Sem	ECTS	ECTS gruppo
-	Teambuilding	1	3	3
ING-IND 35 L-ART/03	Business Innovation or History of Design	1	6	6
ICAR/13 M-DEA/01	Design methods	1	6	6
ICAR/16 ICAR/13 ICAR/12	Innovation studio	1	12	12
ICAR/13 INF/01	UX-DESIGN	1	6	6
ING-IND/35	Leadership and Innovation (included in the study plan after the selection)	2	6+5	11
M-PSI/01 ICAR13	Service Design and Innovation	2	6	6
L-ART/06 ICAR/13	Visualization and prototyping	2	6	6
ICAR/12 ICAR/13	Product service system design studio – Spatial Design Or Product service system design studio - Service design	2	12	12
				<b>68</b>

After the selection, it will be deleted from the Design seminary plan so that it will be included in the Study plan of 2021/22



Second year Courses (PSPA PS3) A.A. 2021/22 (unless changes are made in connection with the approval of the study manifesto)

SSD	Denominazione Insegnamento	Sem	ECTS	ECTS gruppo
ING-IND/35	Business & industrial economics	2	20 (scelta di due su tre)	20
ING-IND/35	Strategy & marketing	1		
ING-IND/35	Accounting, finance and control	1		
ING-IND/17	Logistics Management	1-2	10	10
ING-IND/17	Operations management	1-2		
ING-IND/35	Design strategy *	1	5	5
ING-IND/35	Economics of innovation*	1	5	5
ING-IND/17	Product life cycle management	2	5	5
ING-IND/35	Management of design and innovation projects	2	5	5
ING-IND/17	Digital business innovation	2	5	5
ICAR/13	Design seminar	2	6	6
				<b>61</b>

\*Denomination 2021/22 pending definition

Third year courses (PSPA PS3) A.A. 2022/23 (unless changes are made in connection with the approval of the study manifesto)

SSD	Denominazione Insegnamento	Sem	ECTS	ECTS gruppo
ICAR/13	Branding and Communication	1	6	6
ICAR/12	Professional Workshop	1	6	6
internship	Internship	1	9	9
Final evaluation	Thesis	1	5	15 Concatenati
Final evaluation	Thesis	2	10	
ING-IND/35 ICAR/13	Design Management Lab	2	15	15
				<b>51</b>