DE LORENZO

Didactic Laboratories for **Electric Machines**

KEY NUMBERS

4 Products
30 Accessories
112 Practical experiences
110 h Theoretical lessons
55 h Practical lessons

30 STUDENTS

WHO IS FOR

- Electrical engineering
- Mechatronics engineering
- Electrical and electronics engineering
- Mechanical engineering
- Industrial maintenance Technician
- Electrical Technician
- Industrial Electrical Technician

Didactic solutions for the future of Electric Machines

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LABORATORY [DL ELMACLAB]

ELECTRIC MACHINES

An **electric machine** is a device capable of converting electrical energy into mechanical energy and vice versa or transforming electrical energy so that it can be used in a wide range of applications and environments, from industry and homes to public spaces.

Electric machines in the industrial field are used in multiple applications ranging from large fans, conveyor belts, pumps, elevators, cranes, rolling mills, to machines such as drills, milling cutters, lathes, mixers or robotic arms. Due to the great variety of uses, these mechanisms have been specialized and divided into different categories, depending on the type of current used or their functions.

De Lorenzo offers different didactic solutions for the study of machines whose main characteristics include: reconfigurable laboratories composed of discrete elements; a didactic approach; practical training platforms based on experiments that allow students to interact with real industrial equipment through hardware and software tools.

- ELECTRIC MACHINES
- MOTOR CONTROL
- AUTOMATED TEST FOR ELECTRIC MACHINES
- THREE-PHASE ASYNCHRONOUS MOTORS 1KW
- SINGLE-PHASE MOTORS 1KW
- DIRECT CURRENT MOTORS 1KW
- DIRECT CURRENT GENERATORS 1KW
- THREE-PHASE SYNCHRONOUS MACHINES 1KW

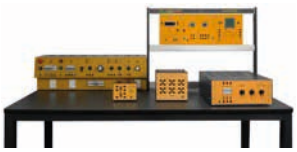
LABORATORY [DL ELMACLAB]

ELECTRICAL MACHINES

ELECTRICAL MACHINES - MOTOR CONTROL AUTOMATED TEST FOR ELECTRIC MACHINES

DL OPENLAB_A

THREE-PHASE ASYNCHRONOUS MOTORS 1KW



DL MAC-TT_UM

DL 1027

SINGLE-PHASE MOTORS 1KW

DL PLC-MAC

DIRECT CURRENT MOTORS 1KW

DL 1017R

DIRECT CURRENT GENERATORS 1KW

DL 1024P

THREE-PHASE SYNCHRONOUS MACHINES 1KW

DL 1017L

LABORATORY [DL ELMACLAB]

ELECTRICAL MACHINES

30 STUDENTS

STATION	CODES	EX.	DESCRIPTION	Q.TY	COMPUTER REQUIRED
PROFESSOR STATION	-	-	PROFESSOR DESK	1	
	-	-	PROFESSOR CHAIR	1	
	-	-	PROFESSOR COMPUTER	1	
	-	-	PRINTER	1	
	-	-	INTERACTIVE WHITEBOARD	1	✓
	DL EM-TEST	-	AUTOMATIC TEST BENCH FOR ELECTRIC MACHINES	1	
	DL SMART-DASHBOARD-5A	-	CLASSROOM MANAGEMENT FOR SMARTSIMS	1	✓
ELECTRICAL MACHINES	DL OPEN-SSEM-30C50U	-	SMART SIMULATOR FOR ELECTRIC MACHINES TRAINING DL OPENLAB-SSEM	1	✓
	DL OPENLAB-A	20	AUTOMATIC ELECTRIC MACHINES LABORATORY	4	✓
	DL 1001-1	-	WORKING BENCH 2 X 1 X 0,9 MT	4	
	DL MAC-TT_UM	20	BENCH FOR THE STUDY OF SINGLE-PHASE AND THREE-PHASE TRANSFORMERS (0,3 kW)	2	✓
	DL 1001-1	-	WORKING BENCH 2 X 1 X 0,9 MT	2	
MOTOR CONTROL	DL PLC-MAC	29	BENCH FOR THE STUDY OF THE MOTOR AUTOMATION	2	✓
	DL 1001-1	-	WORKING BENCH 2 X 1 X 0,9 MT	2	
AUTOMATED TEST	DL EM-TEST	43	AUTOMATIC TEST BENCH FOR ELECTRIC MACHINES	4	
THREE-PHASE ASYNCHRONOUS MOTORS 1KW	DL 1021	-	SQUIRREL CAGE THREE-PHASE ASYNCHRONOUS MOTOR	1	
	DL 2035	-	STAR/DELTA STARTER	1	
	DL 1022	-	SLIP RING THREE-PHASE ASYNCHRONOUS MOTOR	1	
	DL 1022RHD3	-	STARTING AND SYNCHRONIZATION UNIT FOR SLIP RING MOTORS	1	
	DL 1027	-	THREE-PHASE TWO SPEED ASYNCHRONOUS MOTOR	1	
	DL 2036	-	POLE SWITCHING UNIT	1	
SINGLE-PHASE MOTORS 1KW	DL 1028	-	SPLIT-PHASE MOTOR	1	
	DL 1028AC	-	CAPACITOR UNIT	1	
	DL 1028C	-	CAPACITOR MOTOR	1	
	DL 1029	-	UNIVERSAL MOTOR	1	
	DL 1029R	-	REPULSION MOTOR	1	
DIRECT CURRENT MOTORS 1KW	DL 1024R	-	DIRECT CURRENT POLIEXCITATION MACHINE	1	
	DL 1017RHD	-	STARTING RHEOSTAT FOR DC MOTORS	1	
	DL 1017RHE	-	FIELD RHEOSTAT FOR DC MACHINES	1	
	DL 1017RHES	-	EXCITATION RHEOSTAT FOR DC MACHINES	1	
	DL 1023	-	DIRECT CURRENT MOTOR COMPOUND EXCITATION	1	
	DL 1023P	-	DIRECT CURRENT MOTOR SHUNT EXCITATION	1	
	DL 1023S	-	DIRECT CURRENT MOTOR SERIES EXCITATION	1	
DIRECT CURRENT GENERATORS 1KW	DL 1024	-	DIRECT CURRENT GENERATOR COMPOUND EXCITATION	1	
	DL 1017RHE	-	EXCITATION RHEOSTAT FOR DC MACHINES	1	
	DL 1024P	-	DIRECT CURRENT GENERATOR SHUNT EXCITATION	1	
	DL 1024S	-	DIRECT CURRENT GENERATOR SERIES EXCITATION	1	
	DL 1017RHES	-	EXCITATION RHEOSTAT FOR DC MACHINES	1	
	DL 1017R	-	RESISTIVE LOAD	1	
THREE-PHASE SYNCHRONOUS MACHINES 1KW	DL 1026A	-	THREE-PHASE SYNCRONOUS MACHINE	1	
	DL 1030	-	PARALLEL BOARD	1	
	DL 1017R	-	RESISTIVE LOAD	1	
	DL 1017L	-	INDUCTIVE LOAD	1	
	DL 1017C	-	CAPACITIVE LOAD	1	
	DL 1026R	-	RELUCTANCE MOTOR	1	
FURNITURE & COMPUTERS	DL 1001-1-08	-	BASIC BENCH 2 X 1 X 0.8 MT	15	
	-	-	STUDENT CHAIR	30	
	-	-	STUDENT COMPUTER	30	
	-	-	SHELF	5	

The laboratory proposal can be adjusted to fit clients needs.

MISSION

Educational Innovation for a Sustainable Future

Our mission is to provide cutting-edge educational solutions that equip new generations of technicians and engineers in the renewable energy sector. In a world facing increasingly urgent environmental challenges, De Lorenzo is committed to creating innovative educational laboratories that allow students to gain both practical and theoretical skills in sustainable energy.

By integrating **technology**, **pedagogy**, and **hands-on experience**, our goal is to support the development of cleaner, more efficient energy solutions, contributing to the training of professionals capable of leading the transition toward a sustainable future.

Our VALUES

- **PEOPLE**
- **INNOVATION**
- **AGE**
- **TEAMWORK**
- **QUALITY**
- **HONESTY AND INTEGRITY**
- **FLEXIBILITY**
- **INVOLVEMENTS**

LABORATORIES

Shaping the Future, Fueling Innovation

De Lorenzo is a comprehensive provider of **educational services**. Its offerings include laboratories designed to facilitate the transfer of technical knowledge and essential soft skills, such as:

PROBLEM SOLVING **CRITICAL THINKING** **TEAMWORK**

For each discipline, De Lorenzo provides fully **equipped laboratories** with high-quality tools and materials, essential for achieving educational goals.

Tailored Solutions
for Effective Learning

Our setup provides a turnkey, **flexible, and fully customizable solution** to meet any educational need. Whether for small classes or large groups, our labs **can be scaled with the right number of products to ensure an optimal and engaging learning experience.**

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STEPS
for a succesful project

01

Proposal
of the necessary equipment to furnish the laboratory*.

02

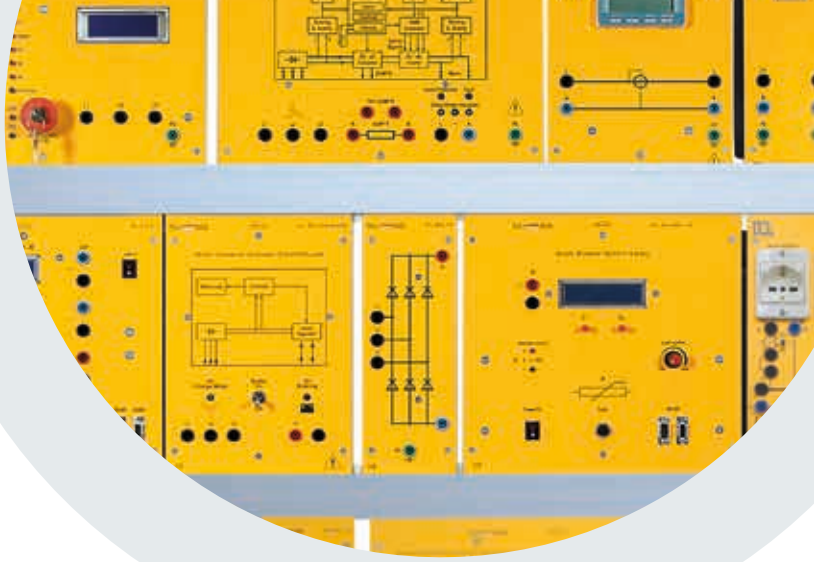
Listening
to the client's needs. Definition of the teaching objectives, and analysing the socioeconomic context of the region.

03

Analysis
of the available teaching spaces, pre-existing resources and technical expertise.

04

Definition
of the relevant laboratories to reach the desired teaching objectives.

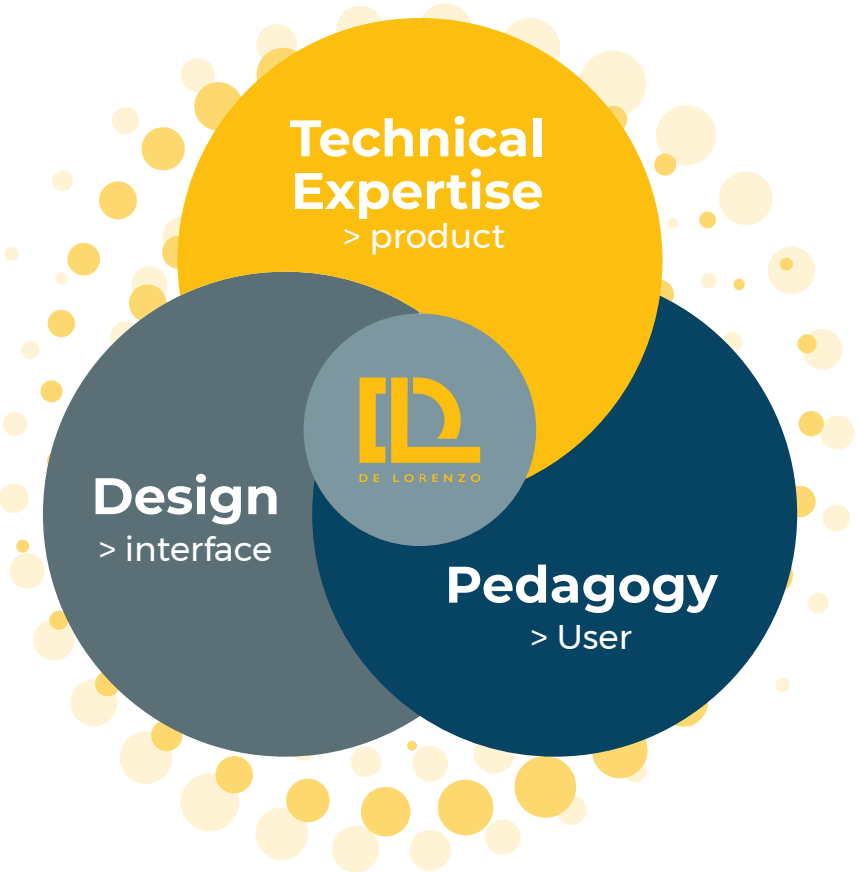


OUR PRODUCTS

Technology that teaches, innovation that inspires

Creating **turnkey educational labs** that boost student engagement and simplify teaching is an integral part of De Lorenzo's DNA. We are committed to the continuous improvement of our products to facilitate both learning and teaching, and to implementing cutting-edge techniques for effective knowledge transfer.

De Lorenzo's products embody a synthesis of **TECHNICAL, PEDAGOGICAL, and DESIGN** expertise. To effectively facilitate knowledge transfer, it is essential to consider all of these aspects. **In the design of educational labs, the elements of interaction between users and product (Design) and between users and subject matter (Pedagogy) are just as crucial as technical knowledge.**



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TECHNICAL EXPERTISE

Engineering Precision, Boundless Learning

Our products are crafted by passionate technicians and engineers who work to make every essential technology accessible for education in today's society.

De Lorenzo products embody both the **substance of the subjects they teach** and **the tools to teach them**. Technology that demonstrates and teaches itself.

The designers at De Lorenzo understand the challenges faced by students and educators, striving to remove barriers in learning and teaching. This commitment ensures that our products make complex subjects easier to access and understand.

2 DESIGN

Functionality that inspires, aesthetics that engage

The products that compose the De Lorenzo laboratories are educational. Therefore, the interaction between the user and the product is central. For this reason, De Lorenzo products are created in Italy, designed to facilitate the user experience and enhanced by **didactic manuals and software that simplify teachers' work and encourage student learning.**

Colours, international symbology, a clear interface and the ergonomics of the components are just some of the features considered during the design process.

CHARACTERISTICS

- **INSTINCTIVELY COMPREHENSIBLE** Synoptic tables, images and international coding make it easy to find your way around
- **EASY TO USE** Self-explaining
- **FUNCTIONAL** Intuitive: designed to simplify learning
- **RESISTANT** Manufactured in Italy, with high quality raw materials
- **MODULAR** Replaceable, interchangeable, easily repairable
- **COHERENT** Appearance, mode of use, maintenance
- **WITH RELEVANT AESTHETICS** Well-finished aesthetics facilitates attention maintenance
- **SAFE** Product and line safety is guaranteed

3 PEDAGOGY

Maximising the potential of every learner

De Lorenzo develops teaching equipment that integrates fundamental pedagogical principles such as **simulation of real challenges, repetition, imitation and playfulness**. The laboratories support teachers in creating captivating lessons, keeping students' attention high.

The laboratories facilitate the application of these principles, but do not replace the teachers' skills. For this reason, De Lorenzo **trains teachers through its Academy**, enabling them to exploit the products' potential to the fullest, even **creating new experiments** in addition to those in the manuals. In fact, De Lorenzo's products are open and allow the exercises to be extended.

FUNDAMENTAL PEDAGOGICAL PRINCIPLES	
Experience-based learning	✓
Integration of theory and practice	✓
Immediate feedback	✓
Didactic support	✓
Continuous evaluation	✓
Autonomous learning	✓
Collaboration and teamwork	✓
Integration and accessibility	✓
Reflectiveness and critical thinking	✓

4 ACADEMY

From design to autonomy: your educational partner

An environment dedicated to the choice, design and use of teaching laboratories, where theory meets practice, offering students a complete educational experience.

A team of professionals who solve the problems of consultants and teachers daily will provide you with a 360° view of the potential of the products to create high-level teaching, making you autonomous in their exploitation.

A team that has gained experience and skills over the years in national and international design, production, and consultancy will explain to you how to choose laboratories, optimise resources, and didactically use the product for the transfer of technical knowledge.

KEY NUMBERS

- 106 hours of training per year
- 16 courses per year
- 5 Trainers in HQ
- 12 Trainers on-site
- 70 countries of origin of trainees
- Courses available in 5 languages

WHO IT IS ADDRESSED TO

- Professors
- Educational consultants
- Resellers
- HR development managers
- Ministers

Experience the
Future of Education.
Let's Talk About
Your Project!

DE LORENZO

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