

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

ACRONYMS

CCD	[Commissione di Coordinamento Didattico]	Didactic Coordination Commission
CdS	[Corso/i di Studio]	Degree Program
CPDS	[Commissione Paritetica Docenti-Studenti]	Joint Teachers-Students Committee
OFA	[Obblighi Formativi Aggiuntivi]	Additional Training Obligations
SUA-CdS	[Scheda Unica Annuale del Corso di Studio]	Annual single form of the Degree Program
RDA	[Regolamento Didattico di Ateneo]	University Didactic Regulations

INDEX

Art. 1	Object
Art. 2	Training objectives
Art. 3	Professional profile and work opportunities
Art. 4	Admission requirements and knowledge required for access to the Degree Program
Art. 5	Procedures for access to the Degree Program
Art. 6	Teaching activities and Credits
Art. 7	Description of teaching methods
Art. 8	Testing of training activities
Art. 9	Degree Program structure and Study Plan
Art. 10	Attendance requirements
Art. 11	Prerequisites and prior knowledge
Art. 12	Degree Program calendar
Art. 13	Criteria for the recognition of credits earned in other Degree Programs in the same Class.
Art. 14	Criteria for the recognition of credits acquired in Degree Programs of different Classes, in university and university-level Degree Programs, through single courses, at online Universities and in International Degree Programs; criteria for the recognition of credits acquired through extra-curricular activities.
Art. 15	Criteria for enrolment in individual teaching courses
Art. 16	Features and arrangements for the final examination
Art. 17	Guidelines for traineeship and internship
Art. 18	Disqualification of student status
Art. 19	Teaching tasks, including supplementary teaching, guidance, and tutoring activities
Art. 20	Evaluation of the quality of the activities performed
Art. 21	Final rules
Art. 22	Publicity and entry into force

Art. 1 Object

1. These Didactic Regulations govern the organisational aspects of the CdS in Electrical Engineering (class L-09). The CdS in Electrical Engineering belongs to the Department of Electrical Engineering and Information Technologies

Università	Università degli Studi di Napoli Federico II
Nome del corso in italiano	Corso di laurea in Ingegneria Elettrica
Nome del corso in inglese	ELECTRICAL ENGINEERING
Classe	L-9 - Ingegneria industriale
Lingua in cui si tiene il corso	italiano
Eventuale indirizzo internet del corso di laurea	http://ingegneria-elettrica.dieti.unina.it
Tasse	
Modalità di svolgimento	a. Corso di studio convenzionale

2. The CdS is governed by the Didactic Coordination Commission (CCD), pursuant to Art. 4 of the RDA.

The Didactic Regulations are issued in compliance with the relevant legislation in force, the Statute of the University of Naples Federico II, and the RDA.

Art. 2

Training objectives

The training course of the Degree Course in Electrical Engineering is oriented towards the acquisition of skills that range across the various sectors of electrical engineering and, more generally, throughout the entire industrial sector, and which represent an effective connection between the industrial culture and that of the information and electronics area. The primary objective is for graduates to obtain a somewhat diversified preparation, through solid basic training in the disciplines common to the various fields of engineering, and in-depth and updated training in the field of electrical engineering through the acquisition of sector-specific methodologies. The broad-spectrum training is aimed at making the electrical engineer particularly versatile and ensuring his ability to successfully face the challenges posed by a rapidly technologically evolving production reality. A specific objective is knowledge of the operating methods of the systems and the main electrical equipment, both with reference to the production and distribution of electrical energy and as tools for the production and transformation of material goods, for the provision of services, for numerous individual and social activities. Attention is paid to medium and low voltage applications of adequate complexity for the three-year course, in order to encourage the maturation of the concepts acquired.

The Electrical Engineer will also possess general knowledge relating to their professional and ethical responsibilities, business contexts and business culture. The studies will also be aimed at stimulating knowledge of contemporary contexts, the development of relational and decision-making skills, and the continuous updating of one's knowledge.

Art. 3

Professional profile and work opportunities

The areas of activity and professional opportunities are the various sectors of the Processing Industry and Companies/Bodies providing goods and services, the private or Public Administration technical structures responsible for the management and control of the environment, energy and of safety, as well as a broader spectrum of professional positions for which aptitude for managing complex processes is required. With specific reference to the ISTAT-ATECO 2007 classification of productive activities, potential sectors of professional insertion are those corresponding to a multiplicity of activities indicated in sections C (Manufacturing activities), D (Supply of electricity, gas, steam and air conditioning), E (Water supply; sewerage networks, waste management and sanitation activities) and P (Education) as well as in groups 71.12 (Activities of engineering and other technical studies), 71.20 (Testing and technical analyses), 72.19 (Other research and experimental development activities in the field of natural sciences and engineering), 84.13.1, (Regulation of affairs concerning fuels and energy), 84.13.3 (Regulation of affairs and services concerning extractive industries and mineral resources - except fuels - manufacturing industries, construction and public works except roads and navigation works).

Art. 4

Admission requirements and knowledge required for access to the Degree Program¹

For successful attendance of Engineering Degree Courses, knowledge of the fundamentals of arithmetic and algebra, geometry, analytical geometry, functions and trigonometry is required. There is an orientation test prior to registration. Evaluation of the student's initial preparation is foreseen. In case of a negative evaluation, enrolment is permitted with educational debts. Recovery activities for any training debts are planned.

Art. 5

Procedures for access to the Degree Program (CdS)

Source: SUA

Framework: A3.b

1. The CCD of the Degree Program normally regulates the admission criteria and any scheduling of enrolments, except in cases subject to different provisions of law².
2. In the event of negative assessment of the adequate initial preparation regarding knowledge requirements for admission to the Degree Program, the CCD assigns specific Additional Formative Obligations (OFA), indicating the means of verification to be fulfilled within the Program's first year.
3. Verification of personal preparation is always mandatory, and only students who meet the curricular requirements can access it. 3. To be admitted to the degree course, you must be in possession of the upper secondary school qualification required by current legislation or another qualification obtained abroad and recognized as suitable.

To access the Course of Study it is necessary to take a Self-Evaluation Test, which is mandatory but not selective, with the attribution, in case of failure, of Additional Educational Obligations.

The access requirements are established by the College of Engineering of the Polytechnic School and Basic Sciences, in a coordinated manner for all the Degree Courses in the Engineering Teaching Area. The Test, prepared by the CISIA Interuniversity Consortium with methods shared at national level, involves the provision of a multiple choice questionnaire on topics of Mathematics, Science, Logic and Verbal Comprehension. The test is delivered online in multiple sessions in the period February-November of each year at accredited computer laboratories of the Polytechnic School and Basic Sciences. More information on the test can be found at:

www.cisiaonline.it/area-tematica-tolc-cisia/home-tolc-generale

At this address, among other things, the calendar of test sessions is available, as well as access to a test site that allows the student to train.

Test session calendars and other information can be found at:

www.scuolapsb.unina.it/index.php/studiare-al-napoli/ammissione-ai-corsi

Art. 6

Teaching activities and university training credit (Teaching activities and CFU)

Each training activity, prescribed by the CdS detail sheet, is measured in CFU. Each CFU corresponds to 25 hours of overall training commitment³ per student and includes the hours of teaching activities

¹ Artt. 7, 13, 14 of the University Didactic Regulations.

² National programmed access is regulated by L. 264/1999 and subsequent amendments and supplements.

³ According to Art. 5, c. 1 of Italian Ministerial Decree No 270/2004, "25 hours of total commitment per student correspond to university training credits; a ministerial decree may justifiably determine variations above or below the aforementioned hours for individual classes, by a limit of 20 per cent".

specified in the curriculum as well as the hours reserved for personal study or other individual training activities.

For the Degree Program covered by this Didactic Regulations, the hours of teaching specified in the curriculum for each CFU, established in relation to the type of training activity, are as follows ⁴:

- Frontal lesson: 8 hours per CFU;
- Seminar: 8 hours per CFU;
- Assisted teaching exercises (in the laboratory or classroom): 12 hours per CFU;
- Practical laboratory activities: 25 hours per CFU;
- Internship: 25 hours per CFU.

For internship activities, one CFU corresponds to 25 hours of training commitment for each student. For internship activities, each credit corresponds to 25 hours of overall training commitment ⁵.

The CFU corresponding to each training activity acquired by the student is awarded by satisfying the assessment procedures (examination, pass mark) indicated in the Course sheet relating to the course/activity attached to these Didactic Regulations.

Art. 7

Description of teaching methods

The didactic activity is carried out in modality conventional.

If necessary, the CCD decides which courses also include teaching activities offered online.

Some courses may also take place in seminar form and/or involve classroom exercises, language, and computer laboratories.

Detailed information on how each course is conducted can be found in the course sheets.

Art. 8

Testing of training activities⁶

1. The CCD, within the prescribed regulatory limits⁷, establishes the number of examinations and other means of assessment that determine the acquisition of credits. Examinations are individual and may consist of written, oral, practical, graphical tests, term papers, interviews, or a combination of these modes.

⁴ The number of hours considers the instructions in Art. 6, c. 5 of the RDA: "of the total 25 hours, for each CFU, are reserved: a) 5 to 10 hours for lectures or guided teaching exercises; b) 5 to 10 hours for seminars; c) 8 to 12 hours for laboratory activities or fieldwork, except in the case of training activities with a high experimental or practical content, and subject to different legal provisions or different determinations by DD.MM."

⁵ For Internship activities (Inter-ministerial Decree 142/1998), subject to further specific provisions, the number of working hours equal to 1 CFU may not be less than 25. [please indicate below in the note any different regulatory provisions, e.g., "LM-13: 1 CFU = 30 hours, Note MUR, Director Cuomo, Prot. 570/2011; LM-51, L-24: 1 CFU = 20 hours professional training activity + 5 hours of further supervised training activity, D.M. 654/2022 (Art. 2, practical-assessment Internship)"]

⁶ Article 22 of the University Didactic Regulations.

⁷ Pursuant to the DD.MM. 16.3.2007 in each Degree Programs the examinations or profit tests envisaged may not be more than 20 (Bachelor's Degrees; Art. 4, c. 2), 12 (Master's Degrees; Art. 4, c. 2), 30 (five-year single-cycle Degrees) or 36 (six-year single-cycle Degrees; Art. 4, c. 3). Pursuant to the RDA, Art. 13, c. 4, "the assessments that constitute an eligibility evaluation for activities referred to in Art. 10, c. 5, letters c), d), and e) of Ministerial Decree no. 270/2004, including the final examination for obtaining the degree, are excluded from the calculation." For Master's Degree Program and single-cycle Master's Degree Program, however, pursuant to the RDA, Art. 14, c. 7, "the assessments that constitute a progress evaluation for activities referred to in Art.10, c. 5, letters d) and e) of Ministerial Decree no. 270/2004 are excluded from the exam count; the final examination for obtaining the Master's Degree and single-cycle Master's Degree is included in the maximum number of exams".

2. The examination procedures published in the course sheets and the examination schedule will be made known to students before the start of classes on the Department's website.⁸
3. Examinations are held subject to booking, which is made electronically. In case the student is unable to book an exam for reasons that the President of the Board considers justifiable, the student may still be admitted to the examination, following those students already booked.
4. Before examination, the President of the Board of Examiners verifies the identity of the student, who must present a valid photo ID.
5. Examinations are marked out of 30. Examinations involving an assessment out of 30 shall be passed with a minimum mark of 18; a mark of 30 may be accompanied by honours by a unanimous vote of the Board. Examinations are marked out of 30 or with a simple pass mark. Assessments following tests other than examinations are marked out with a simple pass mark.
6. Oral exams are open to the public. If written tests are scheduled, the candidate has the right to see his/her paper(s) after correction.
7. The University Didactic Regulations govern Examination Boards⁹.

Art. 9

Degree Program structure and Study Plan

1. The legal duration of the Degree Program is 3 years. It is also possible to enrol, based on the contract, in compliance with the provisions of Article 24 of the RDA.
The student must acquire 180 CFU¹⁰, attributable to the following Types of Training Activities (TAF):
 - A) basic,
 - B) characterising,
 - C) related or complementary,
 - D) at the student's choice¹¹,
 - E) for the final exam,
 - F) further training activities.
2. The degree is awarded after having acquired 180 CFU by passing examinations, not exceeding 20, and the performance of other training activities.
Unless otherwise provided for in the legal framework of University studies, examinations taken as part of basic, characterising, and related or supplementary activities, as well as activities chosen autonomously by the student (TAF D) are taken into consideration for counting purposes. Examinations or assessments relating to activities independently chosen by the student may be

⁸ Reference is made to Art. 22, c. 8, of the University Teaching Regulations, which states that "the Department or School ensures that the dates for progress assessments are published on the portal with reasonable advance notice, which normally cannot be less than 60 days before the start of each academic period, and that an adequate period of time is provided for exam registration, which is generally mandatory."

⁹ Reference is made to Art. 22, paragraph 4 of the RDA according to which "Examination Boards and other assessments committees are appointed by the Director of the Department or by the President of the School when provided for in the School's Regulations. This function may be delegated to the CCD Coordinator. The Commissions comprise of the President and, if necessary, other professors or experts in the subject. In the case of active courses, the President is the course instructor, and in such cases, the Board can validly make decisions even in the presence of the President alone. In other cases, the President is a professor identified at the time of the Board's appointment. In the comprehensive evaluation of the overall performance at the conclusion of an integrated course, the professors in charge of the coordinated modules participate, and the President is appointed when the Commission is appointed."

¹⁰ The total number of CFU for the acquisition of the relevant degree must be understood as follows: six-year single-cycle Degree, 360 CFU; five-year single-cycle Degree, 300 CFU; Bachelor's Degree, 180 CFU; Master's Degree, 120 CFU.

¹¹ Corresponding to at least 12 ECTS for Bachelor's Degrees and at least 8 CFU for Master's Degrees (Art. 4, c. 3 of Ministerial Decree 16.3.2007).

taken into account in the overall calculation corresponding to one unit¹². Tests constituting an assessment of suitability for the activities referred to in Article 10, paragraph 5, letters c), d) and e) of Ministerial Decree 270/2004¹³ are excluded from the count. Integrated Courses comprising of two or more modules are subject to a single examination.

3. In order to acquire the CFU relating to independent choice activities, the student is free to choose among all the Courses offered by the University, provided that they are consistent with the training project. This consistency is assessed by the Didactic Coordination Commission. Also, for the acquisition of the CFU relating to autonomous choice activities, the "passing the exam or other form of profit verification" is required (Art. 5, c. 4 of Ministerial Decree 270/2004).
4. The study plan summarises the structure of the Degree Program, listing the envisaged teachings broken down by course year and, in case, by curriculum. At the end, the propedeuticities envisaged by the Degree Program are listed. The study plan offered to students, with an indication of the scientific-disciplinary sectors and the area to which they belong, of the credits, of the type of educational activity, is set out in Annex 1 to these Didactic Regulations.
5. Pursuant to Art. 11, paragraph 4-bis, of Ministerial Decree 270/2004, it is possible to obtain the Degree according to an individual study plan that also includes educational activities different from those specified in the Didactic Regulations, as long as they are consistent with the CdS detail sheet of the academic year of enrollment. The individual study plan is approved by CDS.

Art. 10

Attendance requirements¹⁴

1. In general, attendance of lectures is a) strongly recommended but not compulsory/ b) compulsory.
In the case of individual courses with compulsory attendance, this option is indicated in the relative teaching/activity course sheet available in Annex 2.
2. If the lecturer envisages a different syllabus modulation for attending and non-attending students, this is indicated in the individual Course details published on the CdS web page and on the teacher's UniNA website.
3. Attendance at seminar activities that award training credits is compulsory. The relative modalities for the attribution of CFU are the responsibility of the CCD.

¹² Pursuant to the D.M. 386/2007.

¹³ Art. 10, c. 5 of Ministerial Decree 270/2004: "In addition to the qualifying training activities, as provided for in paragraphs 1, 2 and 3, Degree Programs shall provide for: a) training activities autonomously chosen by the student as long as they are consistent with the training project [TAF D]; b) training activities in one or more disciplinary fields related or complementary to the basic and characterising ones, also with regard to context cultures and interdisciplinary training [TAF C]; c) training activities related to the preparation of the final exam for the achievement of the degree and, with reference to the degree, to the verification of the knowledge of at least one foreign language in addition to Italian [TAF E]; d) training activities, not envisaged in the previous points, aimed at acquiring additional language knowledge, as well as computer and telematic skills, relational skills, or in any case useful for integration in the world of work, as well as training activities aimed at facilitating professional choices, through direct knowledge of the job sector to which the qualification may give access, including, in particular, training and guidance programs referred to in Decree no. 142 of 25 March 1998 of the Ministry of Labour [TAF F]; e) in the hypothesis referred to in Article 3, paragraph 5, training activities relating to internships and apprenticeships with companies, public administrations, public or private entities including those of the third sector, professional orders and colleges, on the basis of appropriate agreements".

¹⁴ Art. 22, c. 10 of the University Didactic Regulations.

Art. 11

Prerequisites and prior knowledge

1. The list of incoming and outgoing propedeutics (necessary to sit a particular examination) can be found at the end of Annex 1 and in the teaching/activity course sheet (Annex 2).
2. Any prior knowledge deemed necessary is indicated in the individual Teaching Schedule published on the course webpage and on the teacher's UniNA website.

Art. 12

Degree Program Calendar

The Degree Program calendar can be found on the Department's website well before the start of the activities (Art. 21, c. 5 of the RDA).

Art. 13

Criteria for the recognition of credits earned in other Degree Programs in the same Class¹⁵

For students coming from Degree Programs of the same Class, the Didactic Coordination Commission ensures the full recognition of CFU, when associated with activities that are culturally compatible with the training Degree Program, acquired by the student at the originating Degree Program, according to the criteria outlined in Article 14 below. Failure to recognise credits must be adequately justified. It is without prejudice to the fact that the number of credits relating to the same scientific-disciplinary sector directly recognised by the student may not be less than 50% of those previously achieved.

Article 14

Criteria for the recognition of credits acquired in Degree Programs of different classes, in university or university-level Degree Programs, through single courses, at online Universities and in international Degree Programs¹⁶; criteria for the recognition of credits acquired in extra-curricular activities

1. With regard to the criteria for the recognition of CFU acquired in Degree Programs of different Classes, in university or university-level Degree Programs, through single courses, at online Universities and in International Degree Programs, the credits acquired are recognised by the CCD on the basis of the following criteria:
 - analysis of the activities carried out;
 - evaluation of the congruity of the disciplinary scientific sectors and of the contents of the training activities in which the student has earned credits with the specific training objectives of the Degree Program and of the individual training activities to be recognised.

Recognition is carried out up to the number of credits envisaged by the didactic system of the Degree Program. Failure to recognise credits must be adequately justified. Pursuant to Art. 5, c. 5-bis, of Ministerial Decree 270/2004, it is also possible to acquire CFU at other Italian universities on the basis of agreements established between the concerned institutions, in accordance with the regulations current at the time ¹⁷.

¹⁵ Art. 19 of the University Didactic Regulations.

¹⁶ Art. 19 and Art. 27, c.6 of the University Didactic Regulations.

¹⁷ Art. 6, c. 9 of the University Didactic Regulations.

2. Any recognition of CFU relating to examinations passed as single courses may take place within the limit of 36 CFU, upon request of the interested party and following the approval of the CCD. Recognition may not contribute to the reduction of the legal duration of the Degree Program, as determined by Art. 8, c. 2 of Ministerial Decree 270/2004, except for students who enrol while already in possession of a degree of the same level¹⁸.
3. With regard to the criteria for the recognition of CFU acquired in extra-curricular activities, within the limit of 12 CFU the following activities may be recognised:
 - Professional knowledge, skills, and certified skills, taking into account the congruence of the activity carried out and/or of the certified skill with the aims and objectives of the Degree Program as well as the hourly commitment of the duration of the activity.
 - Knowledge and skills acquired in post-secondary-level training activities, which the University contributed to developing and implementing.

Art. 15

Criteria for enrolment in individual teaching courses

Enrolment in individual teaching courses, provided for by the University Didactic Regulations¹⁹, is governed by the "University Regulations for enrolment in individual teaching courses activated as part of the Degree Program"²⁰.

Article 16

Features and modalities for the final examination

The degree in Electrical Engineering is achieved after passing a final test, consisting of the evaluation of a written report, prepared by the student under the guidance of a supervisor, which focuses on training activities carried out within one or more courses or activities of apprenticeship.

The final test is taken by the Candidate before a Commission chaired by the Coordinator of the Study Course and consists in the presentation of a degree paper prepared under the guidance of a supervisor and in the subsequent discussion with the members of the Commission.

The candidate is allowed to make use of audio-visual support, or, alternatively, to draw up a summary booklet, to be delivered in copy to each member of the Commission.

At the end of the presentation, each teacher can make comments to the candidate relating to the topic of the thesis work. The presentation normally lasts no more than 10 minutes.

Article 17

Guidelines for traineeship and internship

1. Students enrolled in the Degree Program may decide to carry out internships or training periods with organisations or companies that have an agreement with the University. Traineeship and internship are not compulsory and contribute to the award of credits for the other training activities chosen by the student and included in the study plan, as provided for by Art. 10, par. 5, letters d and e, of Ministerial Decree 270/2004²¹.
2. The CCD regulates the modalities and characteristics of traineeship and internship with specific regulations.
3. The University of Naples Federico II, through the structure or the offices, ensures constant contact with the world of work to offer students and graduates of the University concrete opportunities for internships and work experience and to promote their professional integration.

¹⁸ Art. 19, c. 4 of the University Didactic Regulations.

¹⁹ Art. 19, c. 4 of the University Didactic Regulations.

²⁰ R.D. No. 348/2021.

²¹ Traineeships ex letter d can be both internal and external; traineeships ex letter e can only be external.

Article 18

Disqualification of student status²²

A student who has not taken any examinations for eight consecutive academic years incurs forfeiture unless his/her contract stipulates otherwise. In any case, forfeiture shall be notified to the student by certified e-mail or other suitable means attesting to its receipt.

Article 19

Teaching tasks, including supplementary teaching, guidance, and tutoring activities

1. Professors and researchers carry out the teaching load assigned to them in accordance with the provisions of the RDA and the Regulations on the teaching and student service duties of professors and researchers and on the procedures for self-certification and verification of actual performance²³.
2. Professors and researchers must guarantee at least two hours of reception every 15 days (or by appointment in any case granted no longer than 15 days) and, in any case, guarantee availability by e-mail.
3. The tutoring service has the task of orienting and assisting students throughout their studies and of removing the obstacles that prevent them from adequately benefiting from attending courses, also through initiatives tailored to the needs and aptitudes of individuals.
4. The University ensures guidance, tutoring and assistance services and activities to welcome and support students. These activities are organised by the Schools and/or Departments under the coordination of the University, as established by the RDA in Article 8.

Article 20

Evaluation of the quality of the activities performed

1. The Didactic Coordination Commission implements all the quality assessment forms of teaching activities envisaged by the regulations in force according to the indications provided by the University Quality Presidium.
2. In order to guarantee the quality of teaching to the students and to identify the needs of the students and all stakeholders, the University of Naples Federico II uses the Quality Assurance (QA)²⁴ System, developed in accordance with the document "Self-evaluation, Evaluation and Accreditation of the Italian University System" of ANVUR, using:
 - surveys on the degree of placement of graduates into the world of work and on post-graduate needs;
 - data extracted from the administration of the questionnaire to assess student satisfaction for each course in the curriculum, with questions relating to the way the course is conducted, teaching materials, teaching aids, organisation, facilities.

The requirements deriving from the analysis of student satisfaction data, discussed, and analysed by the Teaching Coordination Committee and the Joint Teachers' and Students' Committee (CPDS), are included among the input data in the service design process and/or among the quality objectives.

²² Art. 24, c. 5 of the University Didactic Regulations.

²³ R.D No. 2482//2020.

²⁴ The Quality Assurance System, based on a process approach and adequately documented, is designed in such a way as to identify the needs of the students and all stakeholders, and then translate them into requirements that the training offer must meet.

3. The QA System developed by the University implements a process of continuous improvement of the objectives and of the appropriate tools to achieve them, ensuring that planning, monitoring, and self-assessment processes are activated in all the structures to allow the prompt detection of problems, their adequate investigation, and the design of possible solutions.

Article 21

Final Rules

The Department Council, on the proposal of the CCD, submits any proposals to amend and/or supplement these Rules for consideration by the Academic Senate.

Article 22

Publicity and Entry into Force

1. These Rules and Regulations shall enter into force on the day following their publication on the University's official notice board; they shall also be published on the University website. The same forms and methods of publicity shall be used for subsequent amendments and additions.
2. Annex 1 (CdS structure) and Annex 2 (Teaching/Activity course sheet) are integral parts of this Didactic Regulations.

ANNEX 1

DEGREE PROGRAM DIDACTIC REGULATIONS IN ELECTRICAL ENGINEERING CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

STUDY PLAN

KEY

Type of Educational Activity (TAF):

- A = Basic
- B = Characterising
- C = Related or Supplementary
- D = At the student's choice
- E = Final examination and language knowledge
- F = Further training activities

Year I									
Title Course	SSD	Module	Credits	Hours	Type Activities (lectures, workshops, etc.)	Course Modalities (in-person, by distance)	TAF	Disciplinary area	Mandatory/optional
Analisi matematica I	MATH-03/A MAT/05	single	9	72	Lecture	In-person	A	Mathematics Informatics and Statistics	Mandatory
Geometria e algebra	MATH-02/B MAT/03	single	6	48	Lecture	In-person	A	Mathematics Informatics and Statistics	Mandatory
Elementi di informatica	IINF-05/A ING-INF/05	single	6	48	Lecture	In-person	A	Mathematics Informatics and Statistics	Mandatory
Lingua inglese LIVELLO B2		single	3	24	Lecture	In-person	E		Mandatory
Ciclo di seminari su Domini applicativi e problematiche emergenti dell'ingegneria elettrica		single	3	24	Lecture	In-person	F	Further training activities	Mandatory

Analisi matematica II	MATH-03/A MAT/05	single	9	72	Lecture	In-person	A	Matematica, Informat, Statistica	Mandatory
Chimica	CHEM-06/A CHIM/07	single	9	72	Lecture	In-person	A	Physics e chemistry	Mandatory
Fisica generale I	PHYS-01/A FIS/01	single	6	48	Lecture	In-person	A	Physics e chemistry	Mandatory
Laboratorio di MATLAB e Simulink per l'Ingegneria elettrica		single	3	24	Laboratory	In-person	F	Further training activities	Mandatory

Year II

Curriculum: energy from renewable sources and smart grids

Title Course	SSD	Module	Cred s	Hours	Type Activities (lectures, workshops, etc.)	Course Modalities (in-person, by distance)	TAF	Disciplinary area	Mandatory/ optional
Fisica generale II	PHYS-01/A FIS/01	single	6	48	Lecture	In-person	A	Physics e chemistry	Mandatory
Fisica tecnica industriale	IIND-07/A ING- IND/10	single	9	72	Lecture	In-person	C	Related or Supplementary activities	Mandatory
Principi di ingegneria elettrica I e Laboratorio di circuiti elettrici con MATLAB e SPICE	IJET-01/A ING- IND/31	single	9	72	Lecture/ Laboratory	In-person	B	Electrical engineering	Mandatory
Sistemi energetici	IIND-06/A ING-IND/08	single	9	72	Lecture	In-person	C	Related or Supplementary activities	Mandatory
Principi di ingegneria elettrica II e Laboratorio di Campi elettrici e magnetici	IJET-01/A ING- IND/31	single	9	72	Lecture/ Laboratory	In-person	B	Electrical engineering	Mandatory
Fondamenti di misure elettriche	IMIS-01/B ING- INF/07	single	9	72	Lecture	In-person	B	Electrical engineering	Mandatory
Disegno tecnico industriale	IIND-03/B ING-IND/15	single	6	48	Lecture	In-person	B	Ingegneria meccanica	Mandatory

Year II

Curriculum: Sustainable electric mobility

Title Course	SSD	Module	Cred s	Hours	Type Activities (lectures, workshops, etc.)	Course Modalities (in-person, by distance)	TAF	Disciplinary area	Mandatory/ optional
Fisica generale II	PHYS-01/A FIS/01	single	6	48	Lecture	In-person	A	Physics e chemistry	Mandatory
Fisica tecnica industriale	IIND-07/A ING- IND/10	single	9	72	Lecture	In-person	C	Related or Supplementary activities	Mandatory
Principi di ingegneria elettrica I e Laboratorio di circuiti elettrici con MATLAB e SPICE	IJET-01/A ING- IND/31	single	9	72	Lecture/ Laboratory	In-person	B	Electrical engineering	Mandatory

Electronica generale	IINF-01/A ING- INF/01	single	9	72	Lecture	In-person	C	Related or Supplementary activities	Mandatory
Principi di ingegneria elettrica II e Laboratorio di Campi elettrici e magnetici	IJET-01/A ING- IND/31	single	9	72	Lecture/ Laboratory	In-person	B	Electrical engineering	Mandatory
Fondamenti di misure elettriche	IMIS-01/B ING- INF/07	single	9	72	Lecture	In-person	B	Electrical engineering	Mandatory
Disegno tecnico industriale	IIND-03/B ING-IND/15	single	6	48	Lecture	In-person	B	Mechanical engineering	Mandatory

Year III

Curriculum: energy from renewable sources and smart grids

Title Course	SSD	Module	Credits	Hours	Type Activities (lectures, workshops, etc.)	Course Modalities (in-person, by distance)	TAF	Disciplinary area	Mandatory/ optional
Sistemi elettrici	IIND-08/B ING- IND/33	Fondamenti di sistemi elettrici	9	72	Lecture	In-person	B	Electrical engineering	Mandatory
		Apparecchi e impianti elettrici	3	24	Lecture	In-person	B	Electrical engineering	Mandatory
Fondamenti di macchine elettriche	IIND-08/A ING- IND/32		9	72	Lecture/ Laboratory	In-person	B	Automation Engineering	Mandatory
Fondamenti di elettronica di potenza	IIND-08/A ING- IND/32		9	72	Lecture/ Laboratory	In-person	B	Electrical engineering	Mandatory
Insegnamento a scelta (vedi Tabella 1)			0<A< 12			In-person	D		
Elementi di automatica	IINF-04/A ING-INF/04		6	48	Lecture	In-person	B	Automation Engineering	Mandatory
Generatori di energia elettrica e sistemi di accumulo	IIND-08/A ING- IND/32		6	48	Lecture	In-person	B	Electrical engineering	Mandatory
Produzione da fonti rinnovabili e impianti	IIND-08/B ING- IND/33	produzione da fonti rinnovabili e cogenerazione	6	48	Lecture	In-person	B	Electrical engineering	Mandatory
	IIND-08/B ING- IND/33	impianti elettrici per le fonti rinnovabili di energia e reti intelligenti	6	48	Lecture	In-person	B	Electrical engineering	Mandatory
Insegnamento a scelta (vedi Tabella 1)			0<A< 12			In-person	D		
Prova finale			3			In-person	E		

Year III

Curriculum: Sustainable electric mobility

Title Course	SSD	Module	Credits	Hours	Type Activities (lectures, workshops, etc.)	Course Modalities (in-person, by distance)	TAF	Disciplinary area	Mandatory/ optional
Sistemi elettrici	IIND-08/B ING- IND/33	Fondamenti di sistemi elettrici	9	72	Lecture	In-person	B	Electrical engineering	Mandatory
		Apparecchi e impianti elettrici	3	24	Lecture	In-person	B	Electrical engineering	Mandatory
Fondamenti di macchine elettriche	IIND-08/A ING- IND/32	Apparecchi e impianti elettrici	3	24	Lecture	In-person	B	Electrical engineering	Mandatory
Fondamenti di macchine elettriche	IIND-08/A ING- IND/32		9	72	Lecture/ Laboratory	In-person	B	Automation Engineering	Mandatory
Fondamenti di elettronica di potenza	IIND-08/A ING- IND/32		9	72	Lecture/ Laboratory	In-person	B	Electrical engineering	Mandatory
Elementi di automatica	IINF-04/A ING-INF/04		6	48	Lecture	In-person	B	Automation Engineering	Mandatory
Veicoli elettriche e ibridi	IIND-08/A ING- IND/32	propulsione dei veicoli elettrici	6	48	Lecture	In-person	B	Electrical engineering	Mandatory
	IIND-08/B ING- IND/33	impianti elettrici per la mobilità	6	48	Lecture	In-person	B	Electrical engineering	Mandatory
Meccanica dei veicoli	IIND-02/A ING-IND/13		6	48	Lecture	In-person	B	Mechanical engineering	Mandatory
Insegnamento a scelta (vedi Tabella 1)			0<A<12			In-person	D		
Prova finale			3			In-person	E		

Table 1: Recommended choices (educational type D- "autonomously chosen by the student")

Course name	Credits	SEMESTER	S.S.D.	Hosted within
Laboratorio di macchine elettriche ed elettronica di potenza	6	I	IIND-08/A ING- IND/32	L-IELT
Progettazione di un impianto elettrico in bT	6	II	IIND-08/B ING- IND/33	L-IELT
Materiali e Tecnologie elettriche	6	II	IJET-01/A ING-IND/31	L-IELT
Metodi matematici per l'Ingegneria (*)	6	I	MATH-03/A MAT/05	LM-IELT
Nozioni giuridiche fondamentali	6	I	GIUR-01/A IUS/01	LM-IELT
Introduzione alle tecnologie quantistiche	6	II	PHYS-03/A FIS/03	L-IELT

(*) For students who intend to continue after graduation with the Master's Degree Course in Electrical Engineering, it is highlighted that the exam in Mathematical Methods for Engineering, if not achieved during this Course of Study, must be included among the "similar" exams of the Master's Degree Course in Electrical Engineering.

List of Propaedeutic Courses

Course Title	Propaedeutic Course
Analisi Matematica II	Analisi Matematica I
Fisica generale II	Analisi Matematica I
Principi di ingegneria elettrica I e Laboratorio di circuiti elettrici con MATLAB e SPICE	Analisi Matematica I
Principi di ingegneria elettrica II e Laboratorio di Campi elettrici e magnetici	Analisi matematica II, Principi di ingegneria elettrica I e Laboratorio di circuiti elettrici con MATLAB e SPICE
Fondamenti di misure elettriche	Principi di ingegneria elettrica I e Laboratorio di circuiti elettrici con MATLAB e SPICE
Sistemi elettrici	Principi di ingegneria elettrica I e Laboratorio di circuiti elettrici con MATLAB e SPICE
Fondamenti di macchine elettriche	Principi di ingegneria elettrica II
Fondamenti di elettronica di potenza	Principi di ingegneria elettrica I e Laboratorio di circuiti elettrici con MATLAB e SPICE

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM IN ELECTRICAL ENGINEERING CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: ANALISI MATEMATICA I	
SSD: MATH-03/A (MAT/05)	CFU:9
Course Year: I	Type of Educational Activity: A
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The sector includes skills and research areas relating to mathematical analysis in all its aspects (harmonic, convex, functional, linear and non-linear), to the calculus of variations and to the theory of functions, both real and complex, as well as to the analytical theory of Numbers. The teaching skills of this sector also concern all the institutional aspects of basic mathematics.	
Objectives: Provide the fundamental concepts, in view of the applications, relating to infinitesimal, differential and integral calculus for the functions of a real variable. Acquire adequate synthesis skills, rigorous language and operational skills.	
Propaedeutivities: Analisi Matematica II, Fisica II e Metodi Matematici per l'ingegneria Elettrica, Principi di Ingegneria Elettrica I e Laboratorio di Circuiti Elettrici con MatLab e Spice	
Types of examinations and other tests: Written test and oral test	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Geometria e Algebra	
SSD: MATH-02/B (MAT/03)	CFU: 6
Course Year: I	Type of Educational Activity: A
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The sector includes skills and research areas related to geometry, and in particular to the study of the properties and classification of geometric structures and topological, algebraic, differential and analytical (real and complex) varieties. More generally, it studies Geometry in all its aspects, including combinatorial, computational and descriptive ones, and Topology (general, algebraic and differential).	
Objectives: In this course you will have to acquire the basic tools of linear algebra and geometry. The objective of this Course is, on the one hand, to accustom the student to deal with formal problems, using adequate tools and correct language, and on the other to solve specific algebraic and geometric problems, with the classic tools of linear algebra.	
Propaedeuticità: Propedeuticità in uscita:	
Types of examinations and other tests: Written test and oral test	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Elementi di Informatica	
SSD: IINF-05/A (ING-INF/05)	CFU: 6
Course Year: I	Type of Educational Activity: A
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: Scientific-disciplinary skills relating to the creation of information processing systems, as well as their management and use in various application contexts with engineering methodologies and techniques. This area includes the theoretical foundations, methods and technologies suitable for producing technically valid projects, from the point of view of both the adequacy of the proposed solutions and the possibility of technical implementation, economic convenience and organizational effectiveness. These foundations, methods and technologies range across aspects relating to a processing system, from hardware to software, from programming languages to software engineering.	
Objectives: Knowledge of the theoretical foundations: Information representation, Computer architecture, Algorithms and programs. Skills: Use of methods for representing information, Development of algorithms for solving problems of limited complexity, Coding in C/C++ language. Skills: Design and code programs according to structured and modular programming techniques.	
Propaedeutics: Propedeuticità in uscita:	
Types of examinations and other tests: Programming test, Written test, Oral test	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Ciclo di Seminari su domini applicativi e problematiche emergenti dell'ingegneria elettrica		
SSD:		CFU: 3
Course Year: I	Type of Educational Activity: F	
Contents extracted from the SSD declaratory consistent with the training objectives of the Course:		
Objectives: Inform students about the application domains of Electrical Engineering and present the main emerging issues. Origins of electrical engineering in Italy and around the world. Application domains: production of electrical energy from renewable energy sources, transmission, distribution of electrical energy, electric transport by air, naval and land with and without constrained guidance, industrial automation, product transformation, service management, etc. Problems of the various application domains.		
Propaedeuticies: Propedeuticità in uscita:		
Types of examinations and other tests: Eligibility check		

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: ANALISI MATEMATICA II	
SSD: MATH-03/A (MAT/05)	CFU: 9
Course Year: I	Type of Educational Activity: A
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The sector includes skills and research areas relating to mathematical analysis in all its aspects (harmonic, convex, functional, linear and non-linear), to the calculus of variations and to the theory of functions, both real and complex, as well as to the analytical theory of Numbers. The teaching skills of this sector also concern all the institutional aspects of basic mathematics.	
Objectives: Provide the fundamental concepts, in view of the applications, relating to both differential and integral calculus for functions of several real variables; and to ordinary differential equations. Acquisition of a conscious link between theoretical and practical skills.	
Propaedeuticities: Analisi Matematica I	
Propaedeuticities in output: Principi di Ingegneria Elettrica II e Laboratorio di Campi Elettrici e Magnetici	
Types of examinations and other tests: Written test, Oral test	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Chimica	
SSD: CHEM-06/A (CHIM/07)	CFU: 9
Course Year: I	Type of Educational Activity: A
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The sector is interested in scientific and educational - training activities in the field of the study of chemical and chemical-physical foundations in various technological fields, with particular regard to those that refer to materials, their properties and their interaction with the environment , providing a synthesis of the principles common to the different phenomenologies and the different categories of substances.	
Objectives: Critical knowledge of the chemical and chemical-physical foundations necessary to interpret the behavior and transformations of matter in relation to the main technologies and engineering problems: materials, energy production and accumulation, pollution.	
Propaedeuticità: none Propedeuticità in uscita: none	
Types of examinations and other tests: written test and oral test	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Fisica Generale I	
SSD: PHYS-01/A (FIS/01)	CFU:6
Course Year: I	Type of Educational Activity: A
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: It includes the skills necessary to carry out experimental research, in particular those to investigate the physical processes and operating principles of the instrumentation suitable for the control and detection of phenomena, metrology and the processing of experimental data. It includes the skills necessary for the development and transfer of knowledge for innovative technologies. The skills of this sector also concern research in the field of thermodynamics.	
Objectives: Fundamental concepts of classical mechanics and first concepts of thermodynamics, favoring phenomenological and methodological aspects. Conscious operational ability in solving simple exercises in classical mechanics and thermodynamics.	
Propaedeuticies: Propedeuticità in uscita:	
Types of examinations and other tests: written test and oral test	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Laboratorio di MATLAB e Simulink per l'ingegneria elettrica	
SSD:	CFU: 3
Course Year: I	Type of Educational Activity: F
Contents extracted from the SSD declaratory consistent with the training objectives of the Course:	
Objectives: Provide basic knowledge for the use of MATLAB and SIMULINK for Mathematical, Physical and Electrical Engineering applications. MATLAB Fundamentals: Using the MATLAB User Interface, Entering Commands and Creating Variables, Analyzing Vectors and Matrixes, Viewing Vector and Matrix Data, Working with Data Files, Working with Data Types, Automating Commands Using Scripts, Programming with branching and loops, Writing functions. SIMULINK Fundamentals: Create and modify models in Simulink and simulate dynamic systems, Model continuous-time, discrete-time, and hybrid systems, Build hierarchies in the model across subsystems, Create reusable components using masked subsystems, libraries, and referenced models. Applications of MATLAB and SIMULINK for electrical engineering applications.	
Propaedeuticies: Propedeuticità in uscita:	
Types of examinations and other tests: Eligibility check	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Fisica Generale II		
SSD: PHYS-01/A (FIS/01)		CFU: 6
Course Year: II	Type of Educational Activity: A	
Contents extracted from the SSD declaratory consistent with the training objectives of the Course : Skills necessary to investigate the physical processes and operating principles of instrumentation related to electromagnetism.		
Objectives: The student will acquire the fundamental concepts of Electromagnetism, favoring the phenomenological and methodological aspects. You will also acquire operational knowledge aimed at solving problems.		
Propaedeutcities: Analisi Matematica I		
Types of examinations and other tests: written test and oral test.		

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Fisica tecnica Industriale	
SSD: IIND-07/A (ING-IND/10)	CFU:9
Course Year: II	Type of Educational Activity: C
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The sector studies the fundamental and applicative aspects of technical physics, applied thermodynamics, applied thermofluid dynamics and heat transmission. More specifically, it includes skills relating to the thermodynamic analysis of energy processes and their environmental impact, energetics, conversion and use of energy, heat transmission and applied thermo-fluid dynamics, thermotechnical systems and to the thermal systems, to the thermophysical properties of the materials.	
Objectives: The course provides students with the methodological and applicative foundations of thermodynamics for engineers. At the end of the course, the student must be able to understand, interpret and use the thermodynamic models necessary for the identification, formulation and solution of problems relating to systems and processes characterized by energy interactions with the external environment. In particular, the student must be able to analyze engine and operating thermal systems and their components, identify their main characteristics and make a choice between different options and systems.	
Propaedeuticies: Propedeuticità in uscita:	
Types of examinations and other tests: Written test and interview; for students who attend the course, there are two inter-course tests which allow exemption from the written exam	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Principi di ingegneria elettrica I e Laboratorio di circuiti elettrici con MATLAB e SPICE	
SSD: IJET-01/A (ING-IND/31)	CFU: 9
Course Year: II	Type of Educational Activity: B
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The sector studies the theoretical and experimental aspects and the development of the relative applications of the two complementary strands of electromagnetic fields and electrical and electronic circuits in civil, industrial and information engineering. In the second strand, circuits, both analogue and digital, and the related models are studied: linear, non-linear and time-varying, lumped and distributed parameters, signal and power, mono and multidimensional.	
Objectives: Illustrate the basic aspects, also preparatory to subsequent courses, of the theory of linear circuits with reference, in particular, to linear resistive networks and in permanent sinusoidal regime. At the end of the course the students will be able to deal with the analysis of linear circuits. The laboratory part supports the theoretical course in order to help the learning process for the resolution of circuits in steady state, sinusoidal and in the time domain.	
Propaedeuticitie: Analisi Matematica I	
Propaedeuticitie in output: Principi di Ingegneria Elettrica 2, Fondamenti di Misure Elettriche, Sistemi Elettrici, Fondamenti di Elettronica di Potenza, Elementi di Automatica	
Types of examinations and other tests: written test and oral test.	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Sistemi Energetici	
SSD: IIND-06/A (ING-IND/08)	CFU: 9
Course Year: II	Type of Educational Activity: C
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The sector studies the thermodynamic, fluid dynamics, energy, ecological, technological and environmental problems of fluid machines. The skills of the sector cover the design aspects of fluid machines, both driving (steam turbines, gas turbines, hydraulic turbines, process expanders, internal combustion engines) and operating (pumps, fans, compressors) and hosting chemical reactions (combustors, gasifiers, reactors) is the site of heat exchange (evaporators, condensers, recuperators, etc.). The sector also studies the insertion of machines in stationary electrical and thermal energy generation systems, in land, sea and air propulsion systems, in industrial processes, in the tertiary and residential sectors.	
Objectives: The aim of the course is to provide the fundamental notions relating to the work exchange mechanisms of driving machines (turbines) and operating machines (pumps and compressors) and their operational characteristics. The work exchange of the machines is studied through thermo-fluid dynamic relationships, highlighting the operational limits of the individual components. The operation of operating machines (pumps and compressors) is analyzed with reference to the relevant fields of application, selection criteria and regulation techniques. Furthermore, the fundamental notions of Thermal Engine Systems underlying the generation of Electrical Energy will be provided, with particular reference to the methods that allow to increase the efficiency of the transformation of thermal energy into electrical energy. The exercises are numerical in nature or carried out in laboratories. Many topics are presented with the help of elementary calculation programs, for carrying out appropriate parametric analyses.	
Propaedeuticità: Propedeuticità in uscita:	
Types of examinations and other tests: written test and oral test.	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Principi Di Ingegneria Elettrica II E Laboratorio Di Campi Elettrici E Magnetici	
SSD: IIET-01/A (ING-IND/31)	CFU: 9
Course Year: II	Type of Educational Activity: B
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The sector studies the theoretical and experimental aspects and the development of the related applications of the two complementary strands of electromagnetic fields and electrical and electronic circuits in engineering... In the first line, electromagnetic field problems are studied.... In the second strand, electrical and electronic, signal and power circuits, nanocircuits, biocircuits and related models are studied: linear, non-linear and time-variant, lumped and distributed parameters, analog and digital, neural. The two complementary approaches are applied to the analysis, synthesis, physical and numerical modeling and automatic design of electrical equipment, devices and systems...	
Objectives: The course illustrates the aspects of circuit theory relating to linear networks in dynamic operating conditions and the main models of stationary and quasi-stationary electromagnetism for the purposes of subsequent applications. At the end of the course the students will be able to deal with the analysis of linear electrical networks in dynamic conditions, will be able to obtain the equivalent circuit model of simple electric and magnetic devices and solve problems of calculating equivalent parameters of simple electric and magnetic devices, even with the use of application software. Some laboratory exercises are planned which represent the necessary complement for a better understanding of the models introduced in the theory.	
Propaedeuticitities: Analisi matematica II, Principi di Ingegneria Elettrica I	
Types of examinations and other tests: written test and oral test.	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Fondamenti di Misure Elettriche	
SSD: IMIS-01/B (ING-INF/07)	CFU: 9
Course Year: II	Type of Educational Activity: B
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The contents of the course include the research areas and theoretical-applicative skills of the science and technology of electrical and electronic measurements, as well as modern measurement instrumentation. The sector's own methodologies concern the modeling and metrological characterization of measurement methods, components and systems; the extraction, interpretation and representation of measurement information. Research topics include the design, implementation and characterization of measurement methods, components and systems, with particular attention to improving the metrological performance obtained.	
Objectives: Provide the theoretical foundations of measurement. Inform and train the student on the founding concepts of measurement theory, on the main measurement methodologies and procedures and on the basic tools for the analysis of signals in the time and amplitude domains. To enable the student to understand and use the basic instrumentation for the analysis of signals in the time and amplitude domain, to adequately interpret the technical specifications and to correctly present the measurement results. The course also intends to consider the problems relating to power and energy measurements on single-phase and three-phase systems using numerical instrumentation.	
Propaedeutcities: Principi di Ingegneria Elettrica I	
Types of examinations and other tests: Oral test and discussion of project work	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Disegno Tecnico Industriale	
SSD: IIND-03/B (ING-IND/15)	CFU:6
Course Year: II	Type of Educational Activity: B
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: Introduction to the methods and tools needed to produce a technically valid project, in the field of industrial engineering. Morphological, functional and aesthetic study of construction solutions and technical representation methods. Design elements and related representation and modeling tools covered in reference to the various industrial sectors: aerospace, mechanical, naval and plant engineering. Conception of overall architectures and breakdown into components for manufacturing, down to the detail of the construction elements and the choice of tolerances, in relation to cost and functioning requirements.	
Objectives: Interpretation of technical drawings with evaluation of form, function, workability, surface finish and dimensional tolerances. Ability to represent machine parts and simple mechanical systems through construction drawings of details and assembly drawings in compliance with international regulations. Ability to interpret drawings of machine parts complete with information on the quality of workmanship and drawings of simple assemblies complete with information on functionality. Ability to choose recommended tolerances and unified machine parts based on operating conditions and assembly constraints.	
Propaedeuticies: Propedeuticità in uscita:	
Types of examinations and other tests: Written test and oral test on the contents of the graphic works carried out during the course.	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Elettronica Generale		
SSD: IINF-01/A (ING-INF/01)		CFU: 9
Course Year: II	Type of Educational Activity: C	
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The sector gathers the technical and scientific skills necessary to conceive, analyse, design, create and characterize devices, circuits and systems that represent the basis of modern communication and information technologies. The activities of interest include the design and construction of devices, circuits, apparatus and systems based on the specifications, regulations and costs set by the applications. The sector contains a wide range of skills (circuits, microcircuits, architectures and algorithms for information processing, IT tools for assisted design, etc.), each including methodological, design, technological and experimental aspects.		
Objectives: At the end of the course, the student will have acquired the basic methodologies for the analysis of elementary electronic circuits for the analogue processing of signals; they will also have learned to use the operational amplifier as a fundamental functional block in analogue applications and acquired notions of circuit design also with the aid of electronic CAD tools. Finally, the student is introduced to the analysis of elementary electronic circuits for power processing and to modern power electronic devices with hints of implementation technologies.		
Propaedeuticities: Propedeuticità in uscita:		
Types of examinations and other tests: written test and oral test.		

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Sistemi Elettrici [Modulo 1: Fondamenti di sistemi elettrici; Modulo 2: Apparecchi e impianti elettrici]	
SSD: IIND-08/B (ING-IND/33)	CFU: 12 (9+3)
Course Year: III	Type of Educational Activity: B
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The Electrical Energy Systems sector studies the plants and systems that use the energy vector 'electrical energy', ranging from the functional blocks of production (traditional, renewable and innovative) to those of transmission, distribution and use (in the industrial sectors , residential, tertiary and mobility). The sector analyzes the design and operation of systems in light of the criteria of electrical safety, automation, reliability and sustainability. The analysis tools used belong to the entire range of electrical methodologies and include, in the application field of electrical systems, methodologies for automation, power electronics and communications, as well as the methodological aspects of reliability, quality, safety, efficiency and cost-effectiveness. The design, technological and electromagnetic and environmental compatibility aspects are also included.	
Objectives: The course expands training in the electrical engineering sector through the presentation of the technological-applicative characteristics of the components and the definition of the analysis methods of electrical systems. <u>Fundamentals of electrical systems:</u> Provide students with basic knowledge of the typical implementations of the electrical power system, through the analysis of electrical diagrams and the operating problems of electrical energy transmission systems. <i>Equipment and systems:</i> Analyze the methodologies underlying the sizing and operation of electrical systems while providing, at the same time, the basic knowledge necessary to understand the typical implementations of the electrical power system and user electrical systems.	
Propaedeuticity: Principi di Ingegneria Elettrica I	
Propedeuticità in uscita: -	
Types of examinations and other tests: oral test	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Fondamenti di macchine elettriche	
SSD: IIND-08/A (ING-IND/32)	CFU: 9
Course Year: III	Type of Educational Activity: B
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The sector includes, among others, studies concerning electrical machines, electrical materials, electrical technologies and electromechanical constructions and which translate basic and applicative problems of energy conversions, with the aim of making it available in the form, measurement and in the quality necessary for the different applications, starting from traditional and renewable energy sources.	
Objectives: Knowledge of the principles and methods of operation of fundamental electrical machines such as transformers, asynchronous and synchronous rotating machines. The course aims to provide students with the tools necessary to determine and analyze the behavior of these machines, in permanent conditions and in some characteristic transitory situations, with attention to the construction-construction aspects of the machines and their use in the various types of systems and in electric drives for mobility and for industrial and civil applications.	
Propaedeuticities: Principi di ingegneria elettrica II	
Types of examinations and other tests: written test and oral test	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Fondamenti di Elettronica di potenza	
SSD: IIND-08/A (ING-IND/32)	CFU: 9
Course Year: III	Type of Educational Activity: C
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The sector includes studies concerning power electronic components and converters that translate basic and application problems of energy conversions, with the aim of making it available in the form, size and quality necessary for the various applications in industry, transport railways, cableways and roads, in civil buildings and services, starting from traditional and renewable energy sources. For these topics, the studies involve, in addition to traditional electrical methodologies, also those of industrial power electronics, aimed at studying their behavioral models in a static regime. The studies extend both to the integration of components into systems and to the management of conversion processes in energy systems for industry, transport and the tertiary sector.	
Objectives: Provide the fundamental concepts for the analysis of the operating characteristics of electrical energy conversion structures using semiconductor devices. In addition to the knowledge of the various conversion structures, during the course the choice criteria for selecting a conversion structure that best responds to the specific requests and the criteria to be followed for a rough sizing of the same will also be illustrated.	
Propaedeuticies: Principi di Ingegneria Elettrica I Propedeuticità in uscita:	
Types of examinations and other tests: Experimental test in the laboratory, written test and oral test.	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Elementi di Automatica	
SSD: IIND-04/A (ING-INF/04)	CFU: 6
Course Year: III	Type of Educational Activity: B
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: Methods and technologies for the processing of information (data and signals) aimed at automation (i.e. planning, management and control, carried out automatically) of plants, processes and dynamic systems in general. These terms may include, for example, industrial production processes (both continuous and manufacturing), automatic operating machines (including robotic systems), transport systems, energy production systems, avionics systems, as well as environmental systems. Despite the physical-structural differences existing between these types of systems, the various process classes mentioned above lend themselves, however, to being represented, modeled and simulated, and finally managed and controlled, using methodological tools that are largely invariant with respect to the particular domain application considered. On this unifying approach, both fields of expertise of a general methodological nature and those oriented towards the study and treatment of issues of interest and commitment to the sector with more relevant technological content are developed. In particular, the contents developed in this course are: Oriented abstract systems and their representations. Input-output and state space representations. Analysis of the behavior of continuous systems over time. Analysis using the Laplace transform and the Fourier transform. Harmonic response diagrams and polar diagrams. Fully operational response. Stability. Feedback principles and advantages. References to feedback stability.	
Objectives: Present standard models of dynamic systems, analysis methods and simulation tools for their behavior; the principles of feedback control and the most basic controllers.	
Propaedeutcities: Principi di Ingegneria Elettrica I	
Propedeuticità in uscita:	
Types of examinations and other tests: written test and oral test	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Generatori di energia elettrica e sistemi di accumulo		
SSD: IIND-08/A (ING-IND/32)		CFU: 6
Course Year: III	Type of Educational Activity: B	
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The sector includes, among others, studies concerning electrical machines, electrical energy converters, electrical industrial applications, and which translate basic and applicative problems of energy conversions, with the aim of making it available in the necessary form, measure and quality. for the various applications in industry, transport and services, starting from traditional and renewable energy sources.		
Objectives: Knowledge of the operating methods of different electricity generators from traditional and renewable sources and of electrical energy storage systems. The course intends to provide students with the tools necessary to determine and analyze the behavior of such equipment, in permanent conditions and in some characteristic transitory situations, with particular attention to their methods of use in modern "intelligent" electrical networks (smart-grids).) distributed generation.		
Propaedeuticies: Propedeuticità in uscita:		
Types of examinations and other tests: oral test		

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Produzione da Fonti Rinnovabili e Impianti [Modulo 1: Produzione da Fonti Rinnovabili e Cogenerazione; Modulo 2: Impianti Elettrici per le Fonti Rinnovabili di Energia e Reti Intelligenti]	
SSD: IIND-08/B (ING-IND/33)	CFU: 12 (6+6)
Course Year: III	Type of Educational Activity: B
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: Il settore studia gli impianti ed i sistemi elettrici ed elettronici per l'energia. Lo spettro delle applicazioni considerate si estende a tutti i sistemi di componenti interconnessi che utilizzano vettori elettrici energeticamente significativi e spazia quindi dalla produzione (da fonti tradizionali o alternative, con cogenerazione, con accumulo, etc.) alla trasmissione ed all'utilizzazione dell'energia elettrica (nelle costruzioni civili, nell'industria, nel terziario, nei servizi territoriali, nei trasporti, nello spazio, etc.). A tale contesto afferiscono, in particolare, argomenti quali la sicurezza elettrica, l'automazione, l'affidabilità e la diagnostica dei sistemi elettrici, la tecnica delle alte tensioni, la gestione dell'energia elettrica l'ingegneria dei materiali per i sistemi elettrici, gli impianti elettrici di bordo, i sistemi per i trasporti elettrificati e la multiforme gamma degli impianti elettrici speciali, dalla domotica sino ai vari sistemi computerizzati. Gli aspetti trattati comprendono l'analisi, la pianificazione, la progettazione, la realizzazione, la gestione ed il controllo dei sistemi. Gli strumenti utilizzati appartengono all'intera gamma delle varie metodologie elettriche ed includono, nell'ambito applicativo dell'impiantistica elettrica, l'automazione, l'informatica, l'elettronica di potenza e le comunicazioni, nonché gli aspetti metodologici dell'affidabilità, della qualità, della sicurezza e dell'economicità. Sono, altresì, inclusi gli aspetti progettuali e tecnologici e di compatibilità elettromagnetica ed ambientale.	
Objectives: Fornire agli studenti gli strumenti necessari per l'analisi, in regime di libero mercato, degli impianti di produzione da fonti rinnovabili e di cogenerazione. Analisi delle problematiche di natura tecnica ed economica legate alla connessione dei suddetti impianti alla rete elettrica.	
Propaedeutcities: Propedeuticità in uscita:	
Types of examinations and other tests: Orale	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Veicoli elettrici ed ibridi [Modulo 1: Propulsione dei veicoli elettrici; Modulo 2: Impianti elettrici per la mobilità]	
SSD: Modulo 1: IIND-08/A; Modulo 2: IIND-08/B	CFU: 12 (6+6)
Course Year: III	Type of Educational Activity: B
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: Modulo 1: Il settore comprende gli studi che riguardano macchine elettriche, componenti elettronici di potenza e convertitori, azionamenti elettrici, e che traducono problemi di base ed applicativi delle conversioni dell'energia, allo scopo di renderla disponibile nella forma, nella misura e nella qualità necessarie per le diverse applicazioni nell'industria, nei trasporti ferroviari, funiviari e stradali, negli edifici civili e nei servizi. Gli studi si estendono sia all'integrazione di componenti nei sistemi, sia alla gestione dei processi di conversione nei sistemi energetici per l'industria, i trasporti e il terziario. Modulo 2: Il settore studia la gestione dell'energia elettrica l'ingegneria dei materiali per i sistemi elettrici, gli impianti elettrici di bordo, i sistemi per i trasporti elettrificati e la multiforme gamma degli impianti elettrici speciali. Gli aspetti trattati comprendono l'analisi, la pianificazione, la progettazione, la realizzazione, la gestione ed il controllo dei sistemi.	
Objectives: Modulo 1: Il corso intende fornire agli allievi gli strumenti necessari ad analizzare il comportamento e le caratteristiche di funzionamento degli apparati di propulsione di veicoli elettrici e ibridi, con particolare attenzione agli aspetti energetici e di sostenibilità ambientale. Oltre che ai veicoli terrestri verrà fatto riferimento anche a quelli aerei e marini. Modulo 2: Fornire la conoscenza dei principali aspetti impiantistici di base degli impianti elettrici per l'integrazione delle strutture per la ricarica dei veicoli elettrici. Analisi dell'interfaccia di connessione delle strutture di ricarica con la rete.	
Propaedeuticità: nessuna.	
Propedeuticità in uscita: nessuna.	
Types of examinations and other tests: Prova orale	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Meccanica dei Veicoli		
SSD: IIND-02/A (ING-IND/13)		CFU:6
Course Year: III	Type of Educational Activity: B	
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: Aspetti culturali inerenti lo studio dei sistemi meccanici mediante le metodologie proprie della meccanica teorica. La tipologia delle macchine studiate è del tutto generale; viene, peraltro, fatto ampio riferimento alle macchine motrici ed operatrici, ai dispositivi meccanici, alle macchine automatiche e ai robot, ai veicoli ed ai sistemi biomeccanici. Sono, in particolare, studiate sia l'analisi sia la sintesi del comportamento meccanico delle macchine e dei sistemi sopra indicati. L'analisi si articola nella modellazione, simulazione, regolazione delle stesse; la sintesi è finalizzata alla loro progettazione funzionale. Particolare enfasi è rivolta allo studio dei fenomeni vibratorii delle macchine. Forti interrelazioni si attuano con le metodologie e gli algoritmi sviluppati nei settori del disegno e metodi dell'ingegneria industriale.		
Objectives: Il corso si pone l'obiettivo di fornire le conoscenze fondamentali relative ai fenomeni dinamici derivanti dal funzionamento dei meccanismi e delle macchine. Particolare attenzione è rivolta allo studio del comportamento dinamico dei sistemi meccanici affrontato attraverso la definizione e l'utilizzo di modelli matematici		
Propaedeutivities: Propedeuticità in uscita:		
Types of examinations and other tests: Orale		

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Laboratorio di Macchine Elettriche ed Elettronica di Potenza	
SSD: IIND-08/A (ING-IND/32)	CFU:6
Course Year: III	Type of Educational Activity: D
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: Il settore studia le problematiche che riguardano macchine elettriche, componenti e convertitori elettronici di potenza, e che traducono problemi di base ed applicativi della conversione dell'energia allo scopo di renderla disponibile nella forma, nella misura e nella qualità necessarie per le diverse applicazioni nell'industria e nei trasporti.	
Objectives: Contribuire alla comprensione del funzionamento e delle modalità di impiego dei principali tipi di macchine elettriche e di convertitori statici di energia elettrica con elementi metodologici di caratterizzazione delle stesse.	
Propaedeutivities: Propedeuticità in uscita: -	
Types of examinations and other tests: Prove intercorso e/o prova pratica e colloquio	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Progettazione di un Impianto Elettrico In bT	
SSD: IIND-08/B (ING-IND/33)	CFU: 6
Course Year: III	Type of Educational Activity: D
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The Electrical Energy Systems sector studies the plants and systems that use the energy vector 'electrical energy', ranging from the functional blocks of production (traditional, renewable and innovative) to those of transmission, distribution and use (in the industrial sectors , residential, tertiary and mobility). The sector analyzes the design and operation of systems in light of the criteria of electrical safety, automation, reliability and sustainability. The analysis tools used belong to the entire range of electrical methodologies and include, in the application field of electrical systems, methodologies for automation, power electronics and communications, as well as the methodological aspects of reliability, quality, safety, efficiency and cost-effectiveness. The design, technological and electromagnetic and environmental compatibility aspects are also included.	
Objectives: Acquisition of skills for the design of low voltage electrical systems. Analyze the methodologies underlying the design of user electrical systems.	
Propaedeuticies: Propedeuticità in uscita:	
Types of examinations and other tests: Oral test	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Materiali e Tecnologie Elettriche	
SSD: IJET-01/A (ING-IND/31)	CFU: 6
Course Year: III	Type of Educational Activity: D
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The sector is interested in scientific and educational-training activities in the field of electrical engineering. The sector studies the theoretical and experimental aspects of the two complementary strands of electromagnetic fields and circuits and the development of related applications in the various sectors of engineering. In the first line, problems of electromagnetic field, electromagnetic compatibility, signal integrity, electro- and magneto-fluid dynamics, modeling and diagnostics of materials and systems of electrical and magnetic interest on the macro, micro and nanoscale are studied. ... The two complementary approaches are applied to the analysis, synthesis, physical and numerical modeling and automatic design of electrical equipment, devices and systems ...	
Objectives: The course aims to deepen the knowledge of materials commonly used in the field of electrical engineering, such as conductive materials, magnetic materials, insulating materials and to provide selection criteria in relation to the different applications. Particular emphasis is given to the phenomenon of electric discharge. Notes are also presented on the technologies of some of the main electrical components such as medium and high voltage cables, joints and terminals.	
Propaedeuticit�: Propedeuticit� in uscita:	
Types of examinations and other tests: oral test	

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Nozioni giuridiche fondamentali		Lingua di erogazione dell'Course: italiano
SSD: GIUR-01/A (IUS/01)		CFU: 6
Course Year: I	Type of Educational Activity: C	
Modalità di svolgimento: in presenza		
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The sector includes studies relating to the private law system as it emerges from the legislation of the civil code and from its complementary laws. The studies also concern civil law, personal rights, family rights, information technology law and biolaw.		
Objectives: Introductory concepts: Law and rights; The subjects of the law; Property and other real rights: real rights and assets; the property; the real rights of enjoyment of other people's property; communion and condominium; The technical professional and contracts: Obligations and contracts; contracts; Procurement and public works: the private procurement contract; public procurement; The engineer and the practice of the profession: The professional system; the exercise of the profession.		
Propaedeuticities Propedeuticità in uscita:		
Types of examinations and other tests: oral test		

ANNEX 2

DIDACTIC REGULATIONS OF THE DEGREE PROGRAM

IN ELECTRICAL ENGINEERING

CLASS L-09

School: Polytechnic School and Basic Sciences

Department: Department of Electrical Engineering and Information Technologies

Regulations in force since the academic year 2025-2026

Course: Metodi matematici per l'ingegneria		Lingua di erogazione dell'Course: italiano
SSD: MATH-03/A (MAT/05)		CFU: 6
Course Year: I	Type of Educational Activity: C	
Modalità di svolgimento: in presenza		
Contents extracted from the SSD declaratory consistent with the training objectives of the Course: The sector includes skills and research areas relating to mathematical analysis in all its aspects (harmonic, convex, functional, linear and non-linear), to the calculus of variations and to the theory of functions, both real and complex, as well as to the analytical theory of Numbers. The teaching skills of this sector also concern all the institutional aspects of basic mathematics.		
Objectives: The course aims to provide students with operational awareness of the fundamental concepts and results relating to the theory of analytic functions, distributions, Fourier series, Fourier and Laplace transforms and their applications.		
Propaedeutcities: Propedeuticità in uscita:		
Types of examinations and other tests: written and oral test		