UNIVERSITÀ
DI PAVIA

FACULTY OF ENGINEERING

DEPARTMENT OF INDUSTRIAL AND INFORMATION ENGINEERING

COURSE REGULATIONS
(art. 12 - D.M. 22 October 2004 n. 270)

SECOND CYCLE DEGREE
IN
ELECTRONIC ENGINEERING
Class LM-29
(Second Cycle Degree in Electronic Engineering)

2024/2025 Academic Year

Appendix n. 1 – Study plan
Appendix n. 2 – List of curricular pre-requisites

PART ONE – GENERAL PROVISIONS

Art. 1 - Name, class, department and duration

1. The Masters degree course (C.d.L.M.) in Electronic Engineering, initiated by the Department of Industrial and Information Engineering and co-ordinated by the University of Pavia's Faculty of Engineering, is part of the LM-29 class of the Masters degree courses in Electronic Engineering provided for by Ministerial Decree of 16 March 2007.
2. The Masters degree course duration is two years.

Art. 2 – Regulatory texts

1. In accordance with the freedom of teaching and the rights/obligations of teaching staff and students, the organisation of the teaching and the execution of the educational activities foreseen for the degree course in Electronic Engineering are governed by the present Regulations, the University of Pavia Statute, the University General Regulations, the University Course Regulations, Students Career Regulations, Regulations for part-time student enrolment, Regulations for the composition and functioning of the Teaching Council, the Department of Industrial and Information Engineering Regulations and by the Faculty of Engineering Regulations.
2. The regulations detailed in the previous paragraph are published on the university website at the following addresses:
   - Statue and Regulations of the University of Pavia
   - Regulations of the Department of Electrical, Computer and Biomedical Engineering
   - Regulations of the Faculty of Engineering
3. Regarding all matters not explicitly provided for in the present Regulations, prevailing laws will apply.

Art. 3 - Body responsible for didactic and organisational co-ordination

1. In compliance with the competences and criteria established by the Statute and Regulations detailed in art. 2, the body responsible for the degree course is the Department of Industrial and Information Engineering that has delegated the Faculty of Engineering the responsibility for didactic co-ordination, pursuant to art. 25 and 26 of the Statute. The Information Engineering Academic Advisory Board, hereafter referred to as 'Board', is responsible for the didactic and organisational co-ordination of the degree course, in compliance with the Department and Faculty competences and indications mentioned above, with particular reference to that detailed in art.4 regarding the composition and functioning of Academic Advisory Board.
2. The Faculty president, Department Director, President of the Academic Advisory Board, the degree course co-ordinator, the list of members of the Quality Supervision Board and the list of members of the Review Commission, are published on the Faculty of Engineering website (Governance).

Art. 4 – Administrative services

1. The administrative services provided for the degree course are:
   - The Student Administration Offices (UOC Carriere studenti, UOC Immatricolazione e informastudenti, UOC Admission office), which manage all administrative affairs during the student's university career, from entry to graduation. This includes enrolment, transfers, fees, validation of qualifications and student mobility. The offices are situated in Via Ferrata 1, Pavia; the website can be consulted at https://portale.unipv.it/it/ateneo/organizzazione/amministrazione/area-didattica-e-servizi-agli-studenti;

- The Orientation Centre (C.OR.) that manages activities and projects to aid students in their choice of university course, provides support throughout students' university career and smoothes entry into the workplace. To this end, the Centre organises both individual and group activities, consultancy services and orientation meetings.
- The Faculty of Engineering Administrative Office;
- The Department of Industrial and Information Engineering Administration Office

PART TWO – ORGANISATION OF DIDACTIC ACTIVITIES

Art. 5 – Annual degree programme report

The Annual Degree Programme Report, taken from the Ministerial database, can be consulted at: https://sonl.unipv.it/ava/index.php/2024SUA06416.pdf

Art. 6 – Admission requirements

A) Requirements

1. Pre-requisites for admission to the Degree Course in Electronic Engineering, as specified in subsequent paragraphs, regard the following three aspects:
   a) qualification held;
   b) knowledge acquired (curricular requirements);
   c) personal background.
2. Students who ask to switch or transfer to the Degree Course in Electronic Engineering, from other University of Pavia second-cycle degree courses, or from other universities, are subject to the same entry criteria as candidates who enrol.

B) Qualifications

3. For admission to the Degree Course in Electronic Engineering, students must hold a five- year degree (under former Ministerial Decree 509/99) or three-year degree (ex Ministerial Decree 509/99 or ex Ministerial Decree 270/04), a three-year university diploma or a qualification gained overseas and recognised as valid in adherence with current legislation.

C) Knowledge acquired

4. Students making applications must have acquired a minimum of 36 basic university credits (CFUs), through degree courses, university Masters courses or through enrolling for stand-alone university courses, and 45 CFUs in advanced educational activities related to their specific Scientific Disciplinary Sector (SDS) reported in the table below. Students may self-certify possession of these pre-requisites.

Educational activity	Scientific-disciplinary sectors	Minimum number of CFUs
Basic	CHIM/07; FIS/01; FIS/03; INF/01; ING-INF/05; MAT/02; MAT/03; MAT/05; MAT/06; MAT/07; MAT/08; MAT/09; SECS-S/02	36
Advanced	INF/01; ING-IND/13; ING-IND/16; ING-IND/17; ING-IND/31; ING-IND/32; ING-IND/34; ING-IND/35; ING-INF/01; ING-INF/02; ING-INF/03; ING-INF/04; ING-INF/05; ING-INF/06; ING-INF/07	45
Total		**81**

5. The Committee appointed by the Board will assess the academic backgrounds of graduates from foreign universities, graduates of five-year degree courses (under former Ministerial Decree 509/99), or other candidates, in order to validate their curricular requirements, assessing any educational activities not clearly defined by SDS and/or number of CFUs.
6. In order to allow highly skilled and/or motivated graduates whose university backgrounds do not strictly meet the required curricular pre-requisites to be admitted, the Committee appointed by the Board may, having taken into consideration the candidate's achievements (certified by means of documentation to be attached to the application) and, possibly, through interview, evaluate his/her motivations. The Commission may decide, in derogation, that the curricular requirements for admission to the degree course have been met, on the condition that the candidate satisfies the personal preparation criteria detailed in the successive *Adequacy of candidates' personal preparation* section. In such cases, the Commission will produce a report in which it details any eventual deficiencies as well as conditions to which the candidate must conform in the formulation of the study plan, including courses that may not be included in the standard study plan reported in Appendix
   2 and up to a maximum of 12 CFUs. In all instances, the prevailing Degree Course Programme will be respected as will the total number of CFUs needed in order to obtain the qualification (120 CFUs).
   In cases where the curricular pre-requisites are deemed incompatible with the degree course programme, the Commission indicates the examinations that the candidate should pass, by registering for individual courses, in order to be admitted to the degree course.
7. All candidates who, upon enrolment, fall under the categories detailed in the preceding paragraphs 6 and 7 should contact the Academic Advisory Board which, in turn, will refer to the Committee appointed by the Board, in order to evaluate the educational knowledge acquired in order to be considered for admission to the degree course. This request may be made in allocated slots, even by students who have yet to graduate and who have a three- year study plan already approved at the time of making the evaluation request. The evaluation of curricular requirements also takes into account examinations yet to be taken but included in the final approved study plan. Any eventual modifications to the study will require a new evaluation request to be made.

D) <u>Adequacy of candidates' personal preparation</u>

8. The candidate profile for admission to the second-cycle degree course is reported in the *Requirements* section. Candidates will be deemed to be adequately prepared if they possess:
   a) Knowledge of English to B2 level on the CEF (Common European Framework).
   b) A solid grounding in the basics of engineering and as well as good theoretical and practical knowledge in advanced engineering disciplines.
9. Knowledge of English to B2 level may be demonstrated when registering through the presentation of one of the certificates listed in art. 19 or by presenting a higher-level certificate. In the absence of a certificate, the knowledge of the English language may be verified by the Committee, the same described in the "Requirement" section, upon documented request by the candidate and it can also be held online. Candidates able to demonstrate that they have passed a 3 CFU-level English examination, or an examination held in the English language during their university career do not have to sit the assessment. No certificates are required from students from countries where English is one of the main languages and/or who hold a degree awarded by an institution where the teaching is in English; these students must provide documentation that attests to their status.
10. A solid grounding in the basics of engineering and as well as good theoretical and practical knowledge in advanced engineering disciplines will be verified by an assessment held over two sessions: the first in September-October and the second in January-February. Students yet to graduate may participate in the personal preparation assessment provided, when

sitting the assessment, they hold at least 150 CFUs. The format and topics covered in the assessment can be consulted at the faculty website (http://webing.unipv.eu/enrollment/assessment-test/).

11. Candidates are considered suitable, and exempt from the assessment referred to in the previous paragraph, if his or her degree mark is equal to or greater than 92/110. Candidates yet to graduate and who conditionally enrol (see the subsequent section entitled *Conditional enrolment*), are automatically considered suitable and need not undergo any specific assessment if, when conditionally enrolling, their weighted average mark is greater than or equal to 24/30 (calculated from at least 150 CFUS). If, subsequent to conditionally enrolling under the conditions outlined above the candidate obtains a score lower than 92/110, his/her personal preparation will, nonetheless, be automatically considered satisfactory.
12. In the case of a degree awarded by a foreign university, evaluation of a solid strong understanding of the basic disciplines and a good theoretical and pratical background about engineering distintive disciplines, is carried out on a case by case through an inquiry conducted by the Committee appointed by the Board on the basis of the documentation submitted by the student or eventually, through an interview, at the Commission's request.

E) Conditional enrolment

13. Candidates who possess the curricular requirements and whose personal preparation is deemed satisfactory, under the conditions detailed in the preceding *Adequacy of candidates' personal preparation* section but who have not graduated by the usual enrolment date may conditionally enrol on the condition that this was requested within the deadline established by the university governance offices.
14. Conditional enrolment allows the student to attend lessons in the first semester but not sit examinations until fully enrolled, that is having graduated and, in any case, within the deadline established by the university governance offices. If the student fails to graduate within the deadline established by the university governance offices, enrolment on the second-cycle degree course will be forfeited and any enrolment fees will be automatically reimbursed, net of the duty stamp fee.
15. Candidates, even if not conditionally enrolled but who satisfy all the entry requirements, may enrol within the deadline established by the university governance offices by paying an additional fee.

Art. 7 – Didactic organisation

1. The second-cycle degree course's educational activities allow students to acquire CFUs pursuant to prevailing laws.
2. The overall average workload undertaken in a year by a full-time student is usually set at 60 CFUs.
3. Each CFU credit corresponds to 25 hours average student workload, of which 50% is reserved to self-study or to other individual educational activities except for educational activities that involve extensive practical exercises or experiments. Didactics is organised into lessons, training exercises and practical activities. The subdivision of the didactics into the three forms described above is established by the course professor on the basis of the CFUs attributed to the course, taking the following values as averages:
   - 1 CFU = 7.5 hours of frontal lessons;
   - 1 CFU = 12.5 hours of training exercises;
   - 1 CFU = 22.5 hours of practical activities.
4. Practical didactic activities are those that involve a direct physical approach with the subject matter (e.g. laboratory or on-site activities, guided field trips to factories or offices and

project presentations) and that require the student to commit time outside that needed for the accomplishment of the activity itself.

5. For some of the teachings offered, such as the courses on soft skills and the Sustainable Development Goals – SDG), as per the 2030 Agenda for Sustainable Development of the United Nations,: by passing the exam, in addition to the registration of the related CFU, an open badge can be envisaged, a digital certificate as a proof of knowledge, competencies and abilities gained during the course. The certificate will be issued automatically after the registration of the exam and will be sent to the student's University of Pavia email address.

6. Students are awarded the CFUs assigned to each activity by successfully completing an examination, or alternative form of assessment, to appraise the skills acquired.
7. Credits acquired will remain valid for the duration of the course, regardless of its length, except in cases of forfeiture or withdrawal. Should the student re-enrol, the validity of any credits acquired is subject to an assessment by the Committee appointed by the Board (see Art. 14). In well-motivated cases, the obsolescence of credits relative to certain educational activities may be decided by the Teaching Council once the Faculty's Governing Board has been consulted. Students will be informed as to how to make up any credits deemed obsolete, establishing eventual assessments or tests to be taken.
8. The course is organised into two semesters and the academic year divided into the following didactic periods:
   a) 1st semester: at least 13 weeks of frontal teaching from the end of September/beginning of October
   b) winter examination session: 6-7 weeks (January-February)
   c) 2nd semester: at least 13 weeks of frontal teaching from the beginning ofMarch
   d) summer examination session: 6-7 weeks (June-July)
   e) autumn examination session: 3-4 weeks (September)

9. By May each year, the Faculty's Governing Board decides the start and end dates of the periods mentioned in the previous paragraph (calendar of didactic activities) for the successive academic year; once approved, the calendar is published on the Faculty website.
10. For the final examination (second-cycle degree examination), 6 sessions per year are foreseen. These are usually scheduled for February,March, April, July, September, November and December. By December each year the Faculty's Governing Board will decide the date of the second-cycle degree examinations for the next year; once approved, the calendar is published on the Faculty website.
11. Each year, by the deadline established for the compilation of the Degree Programme Report, lesson times for both semesters in the successive academic year, together with the rooms where lectures will be held and the detailed examination calendar, will be published.

Art. 8 – Study plans

1. All students must present their study plan to the university by the annually-set deadline.
2. Study plans completed following the model in Appendix 1 of the present Regulations, and the recommended options connected to them (*standard study plans*), are automatically approved.
3. Each student's study plan includes compulsory activities, any optional training activities and independently chosen activities and involves the acquisition of a number of credits no less than that required to obtain the qualification.
4. Students may present an alternative study plan (*individual study plans*) on the condition that it meets the requirements established by the course regulations and the educational objectives outlined in the Degree Programme regulations. Individual study plans must be approved by the Committee appointed by the Board.

5. The inclusion of educational activities elected by the student, pursuant to art. 10, paragraph 5, letter a) of Ministerial Decree 270/04, is regulated by the subsequent art.11.
6. Students who opt to enroll part time, in accordance with art. 53 of the University Course Regulations and pursuant to art. 16 of the Students Carrer Regulations and the Regulations governing part-time enrolment must submit an individual study plan that is coherent with study course official duration and agreed upon by the Degree Programme Coordinator.
7. EU, equivalent and non-EU students with a study title awarded abroad will have to attend an Italian course for foreigners as part of additional linguistic knowledge. The following students are considered exempt: 1) who have been awarded an high school qualification or a first level degree in Italian in Italy; 2) who have been awarded an Italian school qualificationabroad; 3) who hold an Italian language certification of at least level B1.

Art. 9 - Joint degree programmes

The second-cycle degree course in Electronic Engineering has activated the following double degree programme:

- National Taipei University of Technology, (Taipei, TAIWAN);

Art. 10 - Attendance and curricular pre-requisites

1. Students are expected to attend all second-cycle degree course programmes.
2. Specific attendance assessments may be introduced for laboratory or experiment-based activities, upon the suggestion of co-ordinating professor; these must be approved by the Teaching Council.
3. The Teaching Council may establish pre-requisites for certain courses if considered appropriate.
4. Pre-requisites may not be established for courses run in the same academic year.
5. In cases where pre-requisites exist, students may not sit an examination under curricular pre-requisite conditions until the preparatory examination related to the course has been passed.
6. The pre-requisites established by the Teaching Council are outlined in Appendix 3.

Art. 11 – Student elective activities

1. Regarding educational activities elected by the student, pursuant to art. 10, paragraph 5, letter a) of Ministerial Decree 270/04 (type D TAF), the Teaching Council proposes a list of recommended courses or activities, however the student may choose any course (taught in Italian and English) on offer at, and accredited by, the University of Pavia provided it is coherent with the course programme.
2. Study plans that differ from those recommended must be approved by the Degree Course Coordinator. Study plans that include courses non coherent with the study course learning plan or which include more than 20% of subjects already covered during the student's previous academic career will not be approved.
3. Students may not choose study plans already taken while attending a previous university course, unless specific validation has been received for this and that such courses are considered separate from the 180 CFUs necessary for the awarding of the first-cycle degree. The competent administrative offices will verify that this regulation has been adhered to while checking students' educational background and prior to granting admission to the second-cycle degree course. In the event of the violation of the above-mentioned regulation, the student will not be allowed to sit the second-cycle degree examination and will be obliged to modify the study plan.
4. Pursuant to Art 10 paragraph 5.a of Ministerial Decree 270/2004 - c.d. "TAF D"), the inclusion, among elected courses, of nationwide and local admission courses related to the medical field is not permitted.

5. In addition to the courses necessary for the graduation, it is possible to include a maximum of 24 CFU of extra teachings to the study plan per academic year, except for the medical area courses of nationally restricted access and the psychology area courses. The course propaedeutic rules must be in any case respected. According to art. 19 paragraph 3 lett. b) of the Student Career Regulations, those enrolled as repeating students can include a maximum of 24 CFU of extra teachings, belonging to the following academic year.

Art. 12 – Internships and placements

No internships or placements are foreseen for the second-cycle degree course in Electronic Engineering.

Art. 13 – Examinations and end-of-course assessments

A) General regulations

1. All activities that offer CFUs conclude with a mark. This assessment and the official result statement will be issued by the professor in charge of the subject that may work with a committee. The committee is formed in compliance with Teaching University Rule Book. The Faculty Dean will decide if a committee is necessary to complete the assessment.
2. The second-cycle degree course may have no more than 12 end-of-course assessments or examinations. This includes specialist educational activities, extra-curricular or related activities and those elected by the student. Examinations (or end-of-course assessments) related to elected courses are considered as corresponding to a single unit, even when the credits assigned require more than one examination or end-of-course assessment. The activities that fall under letters c), d), e) of paragraph 5, art. 10 of Ministerial Decree 270/2004 are not included in the calculation of examinations and end-of-course assessments; the tests foreseen for such activities should not, in any event, exceed 5, comprehensive of the final examination for the awarding of the degree.
3. For courses divided into integrated modules, taught by a team of staff, the end-of-course evaluation is decided by the teaching team. Assessments may be held separately, including those relative to distinct sections of the programme and sat at different times, provided the final overall assessment decision is made collectively.
4. Exam dates for all courses, regardless of the semester in which the course was run, the exam dates will be distributed across the three examination sessions: winter, summer and autumn.
5. The minimum number of exam sessions, and the setting of extraordinary exam dates, respecting the general regulations outlined in the University Course Regulations, is governed by the subsequent *Assessment methods* section.
6. The distribution of exam dates across different sessions is made in respecting a calendar co-ordinated by the Teaching Council with the support of the Administration Office.
7. The exam calendar of all sessions and courses held during the academic year is published on the faculty website within the terms outlined in art. 7, subsection 10.
8. Modifications cannot be made once the exam calendar has been published except in cases of proven necessity that must be supported by written documentation and addressed to the Dean of the faculty. In any event, the session cannot be withdrawn or, except in extraordinary circumstances, brought forward.

B) Assessment methods

1. End-of-course assessment methods are defined by the co-ordinating professors who co-ordinate individual educational activities, adhering to the indications outlined in the successive paragraphs, as well as eventual co-ordination procedures enacted by the Faculty and/or Teaching Council.

2. The co-ordinating professor will publish the assessment methods for each educational activity at the beginning of the academic year using the 'teaching report' available on the online Course Catalogue (also called *Syllabus*).
   The information must state:
   - the type of assessment (written; oral; written + oral);
   - in instances where assessments are held in two phases (e.g. written + oral), the minimum mark necessary to pass the first phase and access the second, the pre-requisites needed to pass each phase as well as the approximate weighting assigned to each individual phase in calculating the final mark.
3. Exam marks must be expressed out of 30. The CFUs are deemed to have been acquired if the mark is equal or superior to 18/30. In the event of a student obtaining 30/30, the commission may award *cum laude* honours. An 'unsatisfactory' mark, even when expressed through a mark, is not reported on the student's career record.
4. For certain educational activities, e.g. internships or other activities included in the teaching programme and published on the *Syllabus*, as stated in the previous subsection 10, assessments may be awarded only two types of grade: 'approved'/'not approved' or 'satisfactory'/'unsatisfactory'.
5. Any assessment where marks are attributed can only be scheduled for the session as reported in the teaching calendar. The Faculty Dean may approve a request for an extra session, beyond the mandatory ones as described in the following subsections, for motivated reasons. Other self-assessments or tests that are not assigned a mark may be held at any time during the academic year, inclusive of periods when lessons are being held.
6. At least six exam dates, distributed over the three exam sessions (winter, summer and autumn), will be scheduled for each course. The examination dates will be open to all students, including those re-sitting. 'Exam date' refers to an examination held within an exam session which, generally, include more than one date. In the event that the examination is held in two phases, (e.g. written and oral), 'exam date' refers to the examination as a whole.
7. Exam sessions normally include two exam dates, separated by at least 14 days. The co-ordinating professor reserves the right to set just one exam date in September; in such cases at least three dates must be scheduled for the exam session (winter or summer) that directly follows the semester in which the course has ended.
8. Teachers of courses that are taught for two semesters or teachers of the single teaching activity (part of the two semester exam) may set a an exam in between the first and the second semester, in the January/February exam session. As outlined in the preceding paragraph 2, the co-ordinating professor must specify the weight (that cannot be nil) that the intermediate assessment has on the overall evaluation.
9. In addition to the exam dates detailed in the preceding paragraphs, an extraordinary date will be set. This is scheduled for a period of at least 15 days (usually in March or April) and chosen by the Dean of the faculty, and may also be for the purpose of admission to the last graduation session for students of the preceding year. Only students in the second year of the second-cycle degree course may register for the extraordinary exam date.
10. Co-ordinating professors reserve the right to schedule, at any time during the academic year, exam dates dedicated to students who have already attended the first semester of the second year of the second-cycle degree course.
11. Extraordinary examination dates may be set for student athletes who participate in sports recognised by the Italian National Olympic Committee or by the Italian Paralympic Committee if scheduled examination dates coincide with at least national-level sports events. Documented proof of impediments to participation in scheduled examinations must be presented to the Dean of the faculty who will, together with the professor, organise an extraordinary examination session.
12. Students who fail to pass a given exam must re-sit during the successive the exam session.

Rules established by professors that limit students' opportunity to register for at least six exam dates during the year are invalid, as detailed in preceding paragraph 14.

13. Students reserve the right to reject any exam mark; in such cases they must re-sit during the next exam session. The rejection of an examination mark must be executed within the deadline and follow the procedure outlined by the co-ordinating professor. Once an exam mark has been accepted and officially registered, the examination may not be repeated nor can the attributed mark be modified.
14. Students may view corrected written examination papers by following the indications provided by the co-ordinating professor.

Art. 14 – Final examination and awarding of degree

1. The second-cycle degree course in Electronic Engineering is awarded following a final examination to verify that the established educational objectives have been reached.
2. The final examination, for which 24 CFUs are assigned, consists of a public discussion, before a specially appointed second-cycle degree commission, of a thesis supervised by a professor. The aim of the discussion is to evaluate the quality of the work, the candidate's overall knowledge of the subject, capacity to present rigorously and clearly, as well as provide supporting arguments of a technical, professional and/or scientific nature.
3. The thesis should consist of a theoretical, experimental or project-based work whose preparation should be proportionate to the number of CFUs assigned: 24 credits equate to 600 hours overall). The thesis should be complete, display critical and/or creative thinking, be written solely by the candidate and provide documented sources. It must develop themes that are strictly coherent with the degree programme objectives and exhibit advanced and original research or be advanced project-based work.
4. The final thesis is prepared under the guidance of a supervisor who is a member of the University of Pavia teaching staff or in charge of a teaching activity offered by the Faculty of Engineering. The role of supervisor is independent of the scientific disciplinary sector of the faculty member assigned that role, as long as the thesis topic falls within his or her competencies and scientific interests. The supervisor:
   - guides and assists the candidate in formulating and defining the content of the thesis;
   - commits to ensuring that the candidate concludes the work in a reasonable timeframe;
   - checks that the thesis is coherent in order to obtain logical and consistent results and verifies the thesis and conclusions are well written;
   - presents the candidate to the degree commission, describing the workload and duration involved in writing the thesis and, with the consensus of the commission president, supports the oral presentation.
5. Candidates may choose their supervisor from the figures detailed in the preceding paragraph 4, requesting the assignation of the thesis well in advance of the final examination and developing the work to the best of his/her ability, adhering to what has been discussed and agreed with the supervisor.
6. Once the thesis has been finished, the supervisor confirms that the workload involved in writing the thesis corresponds to the number of CFUs on offer for the final examination. The supervisor, if not a member of the degree commission, must send a brief summary of the thesis to the commission president before the graduation date. This summary should detail the time spent and effort made by the candidate in writing the thesis.
7. The degree commission is nominated by the Dean of the faculty, acting on a proposal made by the President of the Teaching Council or the Degree Programme Co-ordinator. It is composed of at least seven members of which at least four must be professors or researcher who teach classes offered by the Faculty or borrow by other university departments. Co-supervisors may participate on the commission but do not have voting rights. Normally a

commission is nominated for each exam date and, if circumstances dictate, more than one commission may be nominated. Supervisors of theses presented to the commission should, if possible, form part of the panel.

8. The commission will be headed by the professor with the most experience and highest grade. The President appoints a secretary from the commission members to take minutes.
9. There are, generally, six exam dates during the second-cycle degree academic year, organised according to the calendar that is approved annually by the faculty's Governing Board, as outlined in the preceding art. 7, paragraph 9.
10. The President of the Teaching Council or the Degree Programme Co-ordinator, if nominated by the former, as well as formulating the Commission's proposal to the Dean of the faculty, chooses an examiner for each candidate or delegates this task to the Commission president. The role of the examiner is to scrutinize the thesis in order to furnish a critical analysis of its readability and structure. The candidate has to send a digital copy to the external examiner within the deadline decided by the Administrative Office.
11. The degree result, expressed as a mark out of 110, is obtained by adding a discretionary increase to a basic mark. The overall result includes the assessment marks obtained by the candidate, with the exception of those from excess credit courses and is calculated in accordance with the methods outlined in the subsequent paragraph 12. The discretionary increase is assigned by the Commission during the examination, in adherence with the methods detailed in the subsequent paragraph 13.
12. The basic mark is the weighted average of the marks from the educational activity assessments where these are awarded a final mark, weighted by the number of credits associated to each activity. The weighted average is then reported as a mark out of 110.
13. The discretionary increase, to a maximum value of 6 points, is attributed collectively by the Commission at the end of the examination as a sum of the following three factors:
    - 0 to 2 points are awarded by the Commission for the quality of the candidate's presentation during the examination;
    - 0 to 2 points are awarded by the Commission for the quality and thoroughness of the presented text, once the examiner has been consulted.
    - 0 to 2 points are awarded by the Commission based on the supervisor's assessment of the candidate's presentation.

    The three points indicated above, which may not necessarily be whole numbers, are the result of the mathematical average of the points assigned by each member of the Commission.
14. The final mark (the sum of the weighted average of assessment marks and the three discretionary increase factors) are rounded up to the closest whole number. *Cum laude* honours may be attributed only when the sum of the base mark and the discretionary increase deliberated by the Commission is equal to or exceeds 112/110. The Commission must reach a unanimous decision before awarding *cum laude* honours.
15. The faculty reserves the right to adopt a plagiarism checker tool able to highlight uncredited sections of text, that is where inverted commas have not been used or a source reference not provided for work written by others. If the faculty-established commission judges instances of plagiarism to be serious, the Teaching Council president and the Supervisor will decide whether the final examination can be taken, whether it should be annulled if already taken and whether disciplinary proceedings against the candidate should be initiated.
16. Students are allowed to prepare their thesis in a language other than Italian. For this purpose, the following conditions must be met:
    - that there is the approval of the tutor or the supervisor;
    - that the defense (and/or the thesis) be conducted in one of the main languages of the European Union (English, French, German, Spanish);
    - that an abstract written in Italian and summarizing the content of the thesis is attached;

- that the title is written in both languages, the foreign one and Italian.

The thesis defense is held in Italian, except for study courses entirely taught in English, for which it is held in English

PART THREE – PROVISIONS REGARDING STUDENTS' COURSE OF STUDY

Art. 15 - Criteria for the recognition of duly-certified extra university knowledge and skills

1. Pursuant to Art. 2 para. 147 of L. 286/2006 and Art. 14 of L. 240/2010, the Committee appointed by the Board may validate, for a total number of credits not superior to 12, individually-certified professional skills and knowledge, pursuant to existing applicable regulations, as well as other skills and knowledge acquired during post-secondary school training whose planning involved the participation of a university.
   The Committee appointed by the Board may also validate, for a total number of credits not superior to 6 (of the 12 mentioned above), the awarding of an Olympic or Paralympic medal or World, European or National title in a discipline recognised by the Italian National Olympic Committee or by the Italian Paralympic Committee (pursuant to L. 240/2010, Art. 14). Student participating in the Dual Career programme may apply for a maximum to 12 credits to be validated in compliance with the directives from the Academic Senate.
2. The validation of acquired credits is deliberated by the Committee appointed by the Board on a case-by-case basis. The type of activity (TAF) to which credits to be recognised are attributed is established based on disciplinary-related criteria. In any event, their number is always within the legal limits, where relevant. These take into account the contribution of the activity to be validated in the attainment of the Course of Study's educational objectives, its specific content, and any eventual obsolescence, as well as the time commitment required. To this end, recognition of knowledge and skills must be supported by official documentation except for the elements referred to above; Committee appointed by the Board may implement further verifications if deemed opportune.
3. If, following the validation of acquired credits, the student selects an individual study plan, this must be approved by the Committee appointed by the Board, in accordance with the conditions established in art. 8.

Art. 16 – Criteria for the recognition of duly-acquired credits

1. The Committee appointed by the Board will debate the educational history of students who have been awarded a qualification at the University of Pavia or from another Italian university and who requests, upon enrolment, a shortening of the study plan. This may be granted subject to validation and the recognition of educational credits deemed valid, pursuant to the successive paragraph 5.
2. The Committee appointed by the Board will debate the recognition of educational histories interrupted owing to withdrawal or forfeiture of students who request, upon re-enrolment, a shortening of the study plan. This may be granted subject to validation and the recognition of educational credits deemed valid, pursuant to the successive paragraph 5.
3. The Committee appointed by the Board may validate credits acquired by the student following enrolment on individual courses at the University of Pavia or at other universities.
4. It is also possible to acquire training credits at other Italian universities on the basis of agreements stipulated between the institutions involved, in accordance with current legislation.
5. In the event that the candidate transfers from another university, or moves from another University of Pavia course, the recognition of credits will be decided by the Committee appointed by the Board in adherence with prevailing laws, the University of Pavia's Course Regulations and following a Governing Board and/or Teaching Council debate.
6. The validation of acquired credits is deliberated by the Committee appointed by the Board on

a case-by-case basis. The type of activity (TAF) to which credits to be recognised are attributed, and their number, is, in any event, within the legal limits where relevant, and established based on disciplinary-related criteria. These take into account the contribution of the activity to be validated in the attainment of the Course of Study's educational objectives, its specific content, and any eventual obsolescence, as well as the time commitment required. To this end, recognition of knowledge and skills must be supported by official documentation except for the elements referred to above; the Committee appointed by the Board may implement further verifications if deemed opportune.

7. If, following the validation of acquired credits, the student selects an individual study plan, this must be approved by the Committee appointed by the Board, in accordance with the conditions established in art. 8.
8. When a student is transferring from a course of the same class of study, the credits validated from the same scientific sector cannot be less than 50% of the credits already gained by the student.

Art. 17 – Criteria for recognition of educational activities undertaken at foreign universities

1. Study periods carried out by students on the degree course at foreign università structures in the context of the Erasmus+ Community Programs and International Mobility Programs recognized by the University through international agreements are recognized as a training tool equivalent to that offered by the Faculty with the same student commitment and contents covered with the training course. They are also encouraged as a means of cultural exchange and integration into personal and professional training.
2. The "Learning Agreement" (LA) is the document that defines the foreign educational activities to be attended in substitution of those offered by the University of Pavia's Course of Study; students must complete the document, ensuring an 'overall' coherence with the Course of Study's objectives rather than searching for identical course content.
3. For students intending to study at a foreign university, the possibility for credits to be recognised is established prior to leaving using the LA. This must be signed by a member of the teaching staff nominated by the Teaching Council as the supervisor for foreign studies. This figure is responsible for ensuring that the LA is coherent with the degree Course of Study objectives.
4. At the end of the period of foreign study, the Teaching Council evaluates the educational activities undertaken abroad and votes on their recognition. This process is initiated upon request of the student and based on documented marks awarded by the foreign institution (using the 'Transcript of Records' in the case of the Erasmus Programme and International Mobility Programs recognized by the University through international agreements).
5. The Committee appointed by the Board proceeds with direct correspondence validation between one or more activities from the Course of Study and one or more educational activities for CFUs acquired at the foreign university.
6. In the event that the CFUs acquired at a foreign university includes content that is related to the educational objectives of the degree Course of Study but do not directly correspond with any of the educational activities present in the Study Plan, the Committee appointed by the Board, acting on the Supervisor's advice, may authorise, pursuant to art. 50, paragraph 5 of the Course Regulations, the student to present an Individual Study Plan, in compliance with the declaration of the Course of Study class and regulations. For each educational activity undertaken abroad, any eventual corresponding Scientific Disciplinary Sector must be indicated as well as the relative number of CFUs.
7. For each examination taken at a foreign university, the Committee appointed by the Board will assign a mark that corresponds to the score awarded abroad. Given the existence of different marking criteria, CFUs will be adopted as a reference.
8. Study and research undertaken abroad in preparation for the final examination, or internships

that are part of international agreements (e.g. Erasmus placements) are recognised by the Committee appointed by the Board provided the methods and workload are coherent and the marks documented.

Art. 18 – Admission to subsequent years

1. Enrolment to the second year is not subject to any conditions related to the number of credits to be acquired.

Art. 19 - Certifications

1. The following linguistic certifications (issued as a result of an examination) are considered appropriate and automatically approved, for the purpose of proving that students have the level of English required for admission to a degree course; they also correspond to level B2 of the Common European Framework of Reference for Languages (the same kind of certificate but for higher level of knowledge will be accepted):

Ente Certificatore	Certificazione corrispondente al livello B2 del Quadro Comune Europeo di Riferimento per le Lingue
Cambridge English Language Assessment (Part of the University of Cambridge)	Cambridge English: First (**FCE**) and Business Vantage (**BEC**) Minimum score: 160 [Also English for Speakers of Other Languages (**ESOL International**) Level 1 B2]
Cambridge English Language Assessment (Part of the University of Cambridge)	International English Language Testing System (**IELTS**) Minimum score: 5.5
Cambridge English Language Assessment (Part of the University of Cambridge)	Business Language Testing Service (**BULATS**)* **Reading/Language Knowledge Test** Minimum score: 60 [not used anymore after the end of 2019 and it is called now **Linguaskill Business**]
Educational Testing Service (ETS)	Test of English as a Foreign Language Internet Based Test (**TOEFL iBT**) Minimum score: 77
Educational Testing Service (ETS)	**TOEIC** Listening and Reading Test: punteggio minimo 785 + **TOEIC** Speaking and Writing Test Minimum score: 310
English Speaking Board (ESB)	Also English for Speakers of Other Languages (**ESOL International**) Level 1 B2
Oxford University Press University of Oxford	**Oxford Test of English** B2 Minimum score: 111
Pearson	Pearson English Language Test (**PTE Academic**) Minimum score: 59

Trinity College London	Integrated Skills in English (**ISE II**)** [Anche English for Speakers of Other Languages (**ESOL International**) Level 1 B2] **[valid only if completed on the all modules **(ISE II)]**
City & Guilds	Communicator **B2***** **[*** until available]**
Duolingo	Duolingo Engligh Test: minimum score 90.
Language Centre (University of Pavia)	Level B2
British Institute Examination Board (BIEB)	Level B2

2. The suitability of certifications not included in the table shown at comma 1 or different tests held by other universities or of diploma awarded by university in English speaking countries is assessed on a case-by-case basis by the Faculty Dean who will work in collaboration with the language and, if necessary, by the expertise of the Language Centre of the University. A certificate that proves that the candidate has attended a class of the required level of English, both in Italy and abroad, but it is not completed by any of the certificates in the list above will not be accepted. Partial certificates (only Speaking & Listening or only Spoken English) are not valid.

University of Pavia

Study Course: ELECTRONIC ENGINEERING - 06416

Classe LM-29 Ingegneria elettronica

Regulations 2013/2014 - Course Regulations a.y. 2024/2025

Study Plan academic year 2024/2025

TRACK 01 - MICROELECTRONICS

1° Year - academic year 2024/2025

Learning Activity	CFU	N°	N° (ind.)	Compulsory	Scientific Area	Type of learning activity	Period
510810 - ADVANCED MATHEMATICAL AND NUMERICAL METHODS FOR ENGINEERS	9	1		X			First Semester
Teaching unit of ADVANCED MATHEMATICAL AND NUMERICAL METHODS FOR ENGINEERS							
504434 - ADVANCED MATHEMATICAL METHODS FOR ENGINEERS	3				MAT/05	Related/Supplementary	First Semester
504710 - NUMERICAL METHODS IN ENGINEERING SCIENCES	6				MAT/08	Related/Supplementary	First Semester
507294 - INTRODUCTION TO QUANTUM MECHANICS	3	2		X	FIS/03	Related/Supplementary	First Semester
504990 - INTEGRATED CIRCUIT DEVICES	9	3		X	ING-INF/01	Distinctive	First Semester
504435 - ANALOG INTEGRATED CIRCUITS	9	4		X	ING-INF/01	Distinctive	First Semester
504439 - RF MICROELECTRONICS	9	5		X	ING-INF/01	Distinctive	Second Semester
505002 - ELECTRONIC INSTRUMENTATION AND TECHNOLOGIES	9	6		X	ING-INF/01	Distinctive	Second Semester
504437 - MICROWAVES	9	7		X	ING-INF/02	Distinctive	Second Semester
504440 - DIGITAL IC DESIGN	6	8		X	ING-INF/01	Distinctive	Second Semester
TOT. 63 CFU							

2° Year - academic year 2025/2026

Learning Activity	CFU	N°	N° (ind.)	Compulsory	Scientific Area	Type of learning activity	Period
509352 - INTEGRATED POWER MANAGEMENT	6	9			ING-INF/01	Distinctive	First Semester
504444 - ANTENNAS	6	9			ING-INF/02	Distinctive	First Semester
505021 - ELECTRO-OPTICAL INSTRUMENTATION	6	9			ING-INF/01	Distinctive	First Semester
509685 - ANALOG-DIGITAL INTERFACE CIRCUITS	6	10		X	ING-INF/01	Related/Supplementary	First Semester
510150 - MICROSENSORS, INTEGRATED MICROSYSTEMS AND MEMS	6	11			ING-INF/01	Related/Supplementary	First Semester
509686 - STATISTICAL SIGNAL PROCESSING	6	11			ING-INF/03	Related/Supplementary	Second Semester
FREE CHOICE FROM THE UNIVERSITY COURSE OFFER	12	12*				Optional	
509352 - INTEGRATED POWER MANAGEMENT	6	12*			ING-INF/01	Optional	First Semester

510152 - INTEGRATED PHOTONIC CIRCUITS	6	12*			FIS/03	Optional	First Semester
504998 - DIGITAL COMMUNICATIONS	6	12*			ING-INF/03	Optional	Second Semester
505018 - SATELLITE DATA ANALYSIS	6	12*			ING-INF/02	Optional	First Semester
505021 - ELECTRO-OPTICAL INSTRUMENTATION	6	12*			ING-INF/01	Optional	First Semester
504717 - INDUSTRIAL CONTROL	6	12*			ING-INF/04	Optional	Second Semester
507288 - INTERNET AND MULTIMEDIA	6	12*			ING-INF/03	Optional	First Semester
510150 - MICROSENSORS, INTEGRATED MICROSYSTEMS AND MEMS	6	12*			ING-INF/01	Optional	First Semester
505006 - MICROWAVE MEASUREMENTS	6	12*			ING-INF/02	Optional	First Semester
504464 - ORGANIZATION THEORY AND DESIGN	6	12*			SECS-P/06	Optional	Second Semester
504462 - PROCESS CONTROL	6	12*			ING-INF/04	Optional	First Semester
504463 - ROBOT CONTROL	6	12*			ING-INF/04	Optional	Second Semester
505017 - SATELLITE AND SPACE SYSTEMS	6	12*			ING-INF/02	Optional	First Semester
505012 - LASER SAFETY	6	12*			FIS/03	Optional	First Semester
503188 - STRUMENTAZIONE BIOMEDICA LM	6	12*			ING-INF/06	Optional	First Semester
508744 - BIOELETTROMAGNETISMO APPLICATO	6	12*			ING-INF/02	Optional	Secondo Semestre
509037 - HARDWARE SOFTWARE CODESIGN	6	12*			ING-INF/05	Optional	Second Semester
510443 - MACHINE LEARNING FOR EARTH OBSERVATION DATA PROCESSING AND FUSION**	3	12*			ING-INF/03	Optional	Second Semester
510775 - INTRODUCTION TO QUANTUM TECHNOLOGIES	3	12*			FIS/03	Optional	First Semester
510778 - CUBESATS AND SMALLSATS FOR EARTH OBSERVATION	3	12*			ING-INF/03	Optional	Second Semester
510779 - UAV AND SENSORS FOR PRECISION AGRICULTURE	3	12*			ING-INF/04	Optional	Second Semester
511334 - THERMAL MANAGEMENT FOR INDUSTRIAL AND SPACE APPLICATIONS	6	12*			ING-IND/10	Optional	Second Semester
509536 - ITALIAN LANGUAGE FOR FOREIGN STUDENTS	3	13*			NN	Other	First Semester
505013 - ADVANCED TOPICS IN MICROWAVE TECHNOLOGIES	3	13*			ING-INF/02	Other	All Year
501246 - ETICA AMBIENTALE	3	13*			SECS-P/13	Other	Second Semester
509379 - INDUSTRIAL TOPICS IN MICROELECTRONICS AND PHOTONICS	3	13*			ING-INF/01	Other	All Year
507220 - PLANNING, MANAGEMENT AND SUPPLY OF GOODS AND SERVICES	3	13*			ING-IND/35	Other	Second Semester
503327 - MASTER THESIS	24			X	PROFIN_S	Final Exam	
TOT. 57 CFU							

*Choose a total of 12 CFU for choice n°12; choose 3 CFU for choice n°13. **Learning activities not included in the lecture schedule

TRACK 02 - PHOTONICS

1° Year - academic year 2024/2025

Learning Activity	CFU	N°	N° (ind.)	Compulsory	Scientific Area	Type of learning activity	Period
510810 - ADVANCED MATHEMATICAL AND NUMERICAL METHODS FOR ENGINEERS	9	1		X			First Semester
Teaching unit of ADVANCED MATHEMATICAL AND NUMERICAL METHODS FOR ENGINEERS							
504434 - ADVANCED MATHEMATICAL METHODS FOR ENGINEERS		3			MAT/05	Related/Supplementary	First Semester
504710 - NUMERICAL METHODS IN ENGINEERING SCIENCES		6			MAT/08	Related/Supplementary	First Semester
504992 - OPTOELECTRONIC DEVICES	9	2		X	ING-INF/01	Distinctive	First Semester
508745 - INTRODUCTION TO QUANTUM MECHANICS AND QUANTUM TECHNOLOGIES	6	3		X	FIS/03	Related/Supplementary	First Semester
504444 - ANTENNAS	6	4			ING-INF/02	Distinctive	First Semester
510150 - MICROSENSORS, INTEGRATED MICROSYSTEMS AND MEMS	6	4			ING-INF/01	Distinctive	First Semester
504437 - MICROWAVES	9	5		X	ING-INF/02	Distinctive	Second Semester
504994 - OPTICAL COMMUNICATIONS	9	6		X	ING-INF/01	Distinctive	Second Semester
510153 - QUANTUM ELECTRONICS AND NONLINEAR OPTICS	9	7		X	FIS/03	Related/Supplementary	Second Semester
504998 - DIGITAL COMMUNICATIONS	6	8		X	ING-INF/03	Related/Supplementary	Second Semester
TOT. 63 CFU							

2° Year - academic year 2025/2026

Learning Activity	CFU	N°	N° (ind.)	Compulsory	Scientific Area	Type of learning activity	Period
505021 - ELECTRO-OPTICAL INSTRUMENTATION	6	9		X	ING-INF/01	Distinctive	First Semester
505015 - INDUSTRIAL LASER DESIGN	6	10		X	ING-INF/01	Distinctive	First Semester
510152 - INTEGRATED PHOTONIC CIRCUITS	6	11		X	FIS/03	Related/Supplementary	First Semester
FREE CHOICE FROM THE UNIVERSITY COURSE OFFER	12	12*				Optional	
504999 - ANTENNAS AND PROPAGATION	9	12*			ING-INF/02	Optional	First Semester
504717 - INDUSTRIAL CONTROL	6	12*			ING-INF/04	Optional	Second Semester
507288 - INTERNET AND MULTIMEDIA	6	12*			ING-INF/03	Optional	First Semester
510150 - MICROSENSORS, INTEGRATED MICROSYSTEMS AND MEMS	6	12*			ING-INF/01	Optional	First Semester
505006 - MICROWAVE MEASUREMENTS	6	12*			ING-INF/02	Optional	First Semester
502987 - OPTOELETTRONICA BIOMEDICA	6	12*			ING-INF/01	Optional	Second Semester
504464 - ORGANIZATION THEORY AND DESIGN	6	12*			SECS-P/06	Optional	Second Semester
504462 - PROCESS CONTROL	6	12*			ING-INF/04	Optional	First Semester

505018 - SATELLITE DATA ANALYSIS	6	12*			ING-INF/02	Optional	First Semester
504463 - ROBOT CONTROL	6	12*			ING-INF/04	Optional	Second Semester
505017 - SATELLITE AND SPACE SYSTEMS	6	12*			ING-INF/02	Optional	First Semester
505012 - LASER SAFETY	6	12*			FIS/03	Optional	First Semester
503188 - STRUMENTAZIONE BIOMEDICA LM	6	12*			ING-INF/06	Optional	First Semester
509685 - ANALOG-DIGITAL INTERFACE CIRCUITS	6	12*			ING-INF/01	Optional	First Semester
508744 - BIOELETTROMAGNETISMO APPLICATO	6	12*			ING-INF/02	Optional	Secondo Semestre
510154 - RETRIEVAL OF BIOPHYSICAL PARAMETERS FROM OPTICAL AND RADAR DATA	3	12*			ING-INF/03	Optional	Second Semester
510155 - HYPERSPECTRAL DATA PROCESSING	3	12*			ING-INF/03	Optional	Second Semester
510156 - SAR DIFFERENTIAL INTERFEROMETRY AND TOMOGRAPHY	3	12*			ING-INF/03	Optional	Second Semester
510443 - MACHINE LEARNING FOR EARTH OBSERVATION DATA PROCESSING AND FUSION**	3	12*			ING-INF/03	Optional	Second Semester
510778 - CUBESATS AND SMALLSATS FOR EARTH OBSERVATION	3	12*			ING-INF/03	Optional	Second Semester
510779 - UAV AND SENSORS FOR PRECISION AGRICULTURE	3	12*			ING-INF/04	Optional	Second Semester
509536 - ITALIAN LANGUAGE FOR FOREIGN STUDENTS	3	13*			NN	Other	First Semester
505013 - ADVANCED TOPICS IN MICROWAVE TECHNOLOGIES	3	13*			ING-INF/02	Other	All Year
509379 - INDUSTRIAL TOPICS IN MICROELECTRONICS AND PHOTONICS	3	13*			ING-INF/01	Other	All Year
501246 - ETICA AMBIENTALE	3	13*			SECS-P/13	Other	Second Semester
507220 - PLANNING, MANAGEMENT AND SUPPLY OF GOODS AND SERVICES	3	13*			ING-IND/35	Other	Second Semester
503327 - MASTER THESIS	24			X	PROFIN_S	Final Exam	
TOT. 57 CFU							

*Choose a total of 12 CFU for choice n°12; choose 3 CFU for choice n°13. **Learning activities not included in the lecture schedule

TRACK 03 - SPACE COMMUNICATION AND SENSING

1° Year - academic year 2024/2025

	Learning Activity	CFU	N°	N° (ind.)	Compulsory	Scientific Area	Type of learning activity	Period
510810 - ADVANCED MATHEMATICAL AND NUMERICAL METHODS FOR ENGINEERS		9	1		X			First Semester
Teaching unit of ADVANCED MATHEMATICAL AND NUMERICAL METHODS FOR ENGINEERS								
	504434 - ADVANCED MATHEMATICAL METHODS FOR ENGINEERS	3				MAT/05	Related/Supplementary	First Semester
	504710 - NUMERICAL METHODS IN ENGINEERING SCIENCES	6				MAT/08	Related/Supplementary	First Semester

505018 - SATELLITE DATA ANALYSIS	9	2		X	ING-INF/02	Distinctive	First Semester
508745 - INTRODUCTION TO QUANTUM MECHANICS AND QUANTUM TECHNOLOGIES	6	3		X	FIS/03	Related/Supplementary	First Semester
504999 - ANTENNAS AND PROPAGATION	9	4		X	ING-INF/02	Distinctive	First Semester
504437 - MICROWAVES	9	5		X	ING-INF/02	Distinctive	Second Semester
504994 - OPTICAL COMMUNICATIONS	9	6			ING-INF/01	Distinctive	Second Semester
504439 - RF MICROELECTRONICS	9	6			ING-INF/01	Distinctive	Second Semester
509686 - STATISTICAL SIGNAL PROCESSING	6	7		X	ING-INF/03	Related/Supplementary	Second Semester
504998 - DIGITAL COMMUNICATIONS	6	8		X	ING-INF/03	Related/Supplementary	Second Semester
TOT. 63 CFU							

2° Year - academic year 2025/2026

Learning Activity	CFU	N°	N° (ind.)	Compulsory	Scientific Area	Type of learning activity	Period
505017 - SATELLITE AND SPACE SYSTEMS	6	9		X	ING-INF/02	Distinctive	First Semester
505006 - MICROWAVE MEASUREMENTS	6	10		X	ING-INF/02	Distinctive	First Semester
507214 - WIRED AND WIRELESS COMMUNICATION SYSTEMS	6	11		X	ING-INF/03	Related/Supplementary	First Semester
FREE CHOICE FROM THE UNIVERSITY COURSE OFFER	12	12*				Optional	
505021 - ELECTRO-OPTICAL INSTRUMENTATION	6	12*			ING-INF/01	Optional	First Semester
504717 - INDUSTRIAL CONTROL	6	12*			ING-INF/04	Optional	Second Semester
507288 - INTERNET AND MULTIMEDIA	6	12*			ING-INF/03	Optional	First Semester
510150 - MICROSENSORS, INTEGRATED MICROSYSTEMS AND MEMS	6	12*			ING-INF/01	Optional	First Semester
504464 - ORGANIZATION THEORY AND DESIGN	6	12*			SECS-P/06	Optional	Second Semester
504462 - PROCESS CONTROL	6	12*			ING-INF/04	Optional	First Semester
504463 - ROBOT CONTROL	6	12*			ING-INF/04	Optional	Second Semester
508745 - INTRODUCTION TO QUANTUM MECHANICS AND QUANTUM TECHNOLOGIES	6	12*			FIS/03	Optional	
505012 - LASER SAFETY	6	12*			FIS/03	Optional	First Semester
503188 - STRUMENTAZIONE BIOMEDICA LM	6	12*			ING-INF/06	Optional	First Semester
508744 - BIOELETTROMAGNETISMO APPLICATO	6	12 *			ING-INF/02	Optional	Secondo Semestre
510161 - REMOTE SENSING FOR WATER APPLICATIONS**	3	12*			ING-INF/03	Optional	Second Semester
510162 - REMOTE SENSING FOR WILDFIRE APPLICATIONS**	3	12*			ING-INF/03	Optional	Second Semester

510154 - RETRIEVAL OF BIOPHYSICAL PARAMETERS FROM OPTICAL AND RADAR DATA**	3	12*			ING-INF/03	Optional	Second Semester
510155 - HYPERSPECTRAL DATA PROCESSING**	3	12*			ING-INF/03	Optional	Second Semester
510156 - SAR DIFFERENTIAL INTERFEROMETRY AND TOMOGRAPHY**	3	12*			ING-INF/03	Optional	Second Semester
510163 - PROCESSING OF MULTI-FREQUENCY SAR IMAGES**	3	12*			ING-INF/03	Optional	Second Semester
510443 - MACHINE LEARNING FOR EARTH OBSERVATION DATA PROCESSING AND FUSION**	3	12*			ING-INF/03	Optional	Second Semester
510778 - CUBESATS AND SMALLSATS FOR EARTH OBSERVATION	3	12*			ING-INF/03	Optional	Second Semester
510779 - UAV AND SENSORS FOR PRECISION AGRICULTURE	3	12*			ING-INF/04	Optional	Second Semester
505021 - ELECTRO-OPTICAL INSTRUMENTATION	6	12*			ING-INF/01	Optional	First Semester
509536 - ITALIAN LANGUAGE FOR FOREIGN STUDENTS	3	13*			NN	Other	First Semester
505013 - ADVANCED TOPICS IN MICROWAVE TECHNOLOGIES	3	13*			ING-INF/02	Other	All Year
509379 - INDUSTRIAL TOPICS IN MICROELECTRONICS AND PHOTONICS	3	13*			ING-INF/01	Other	All Year
501246 - ETICA AMBIENTALE	3	13*			SECS-P/13	Other	Second Semester
507220 - PLANNING, MANAGEMENT AND SUPPLY OF GOODS AND SERVICES	3	13*			ING-IND/35	Other	Second Semester
503327 - MASTER THESIS	24			X	PROFIN_S	Final Exam	
TOT. 57 CFU							

*Choose a total of 12 CFU for choice n°12; choose 3 CFU for choice n°13. **Learning activities not included in the lecture schedule

The semester assigned to each learning activity may change. Refer to the time schedule published in the faculty website for confirmation

For more information please refer to the course catalogue

University of Pavia

Faculty of Engineering

Department of Electrical, Computer and Biomedical Engineering

Study Course: ELECTRONIC ENGINEERING
Classe LM-32

INTRODUCTORY COURSES

There are no introductory courses for the Master Programme in Electronic Engineering