



UNIVERSITÀ DI PAVIA

DIPARTIMENTO DI INGEGNERIA INDUSTRIALE E DELL'INFORMAZIONE

DEPARTMENT OF INGEGNERIA INDUSTRIALE E DELL'INFORMAZIONE

Corso di Laurea Magistrale in

Master's Degree in

ELECTRONIC ENGINEERING

PIANO DI STUDIO PER GLI ISCRITTI AL 2° ANNO – DM 270/'04

ANNO ACCADEMICO 2025/2026

STUDY PLAN FOR STUDENTS ENROLLED IN 2°YEAR – DM 270/04 ACADEMIC YEAR 2025/2026

La/Il sottoscritt/a / *The undersigned,*

Matricola / *Matriculation number*

Cognome / *Surname*..... Nome / *Name*.....

Nata/o a / *Born in (city)* Prov./ *State* il / *on*

Residente in / *Resident in (city)*..... Prov./ *State*

CAP / *Postal code* Via o Piazza / *Street name*

N. civico / *number* Tel. / *Phone*

Il Corso di Laurea Magistrale in ELECTRONIC ENGINEERING

Master's Degree in ELECTRONIC ENGINEERING

prevede i seguenti percorsi: / *includes the following tracks:*

- TRACK 01 - MICROELECTRONICS**
- TRACK 02 - PHOTONICS**
- TRACK 03 - SPACE COMMUNICATION AND SENSING**

Gli studenti che intendono effettuare scelte diverse che si discostano dal modello di piano di studi che segue presenteranno un piano di studi individuale (per il quale è prevista una marca da bollo da euro 16,00 che verrà generata dagli uffici). Maggiori informazioni sono disponibili sulla pagina dedicata <https://portale.unipv.it/it/didattica/corsi-di-laurea/studiare/piani-di-studio> nella sezione Eccezioni: il piano cartaceo.

Students who wish to make choices not provided by the following form should submit an individual study plan (in this case administrative offices will generate a fee of €16 for an extra revenue stamp). More information is available at the dedicated webpage: <https://portale.unipv.it/it/didattica/corsi-di-laurea/studiare/piani-di-studio> in the section "Exceptions: Study plan submitted in paper form".

APPROVATO NELLA RIUNIONE DEL CONSIGLIO DIDATTICO/CONSIGLIO DI DIPARTIMENTO DEL / *Approved in the session of the Teaching Council/Department Council on*

SI DICHIARA LA CONFORMITA' DEL PIANO INDIVIDUALE ALL'ORDINAMENTO DIDATTICO DEL CORSO DI STUDIO IN RELAZIONE ALLA COORTE DI APPARTENENZA DELLO STUDENTE (SCHEDA RAD). / *It is declared that the individual plan follows the course regulations depending on the student's year of enrollment (RAD form).*

FIRMA DEL REFERENTE DEL CORSO DI LAUREA MAGISTRALE/ *Signature of the Program Coordinator*

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TRACK 01 – MICROELECTRONICS

1° Year - academic year 2024/2025 - 63 CFU

ATTIVITÀ FORMATIVA Courses	CFU cfu	Settore Scientifico Disciplinary Sector	TAF/Ambito TAF/Teaching Field	Tipo Insegnamento Course Type
510810 - ADVANCED MATHEMATICAL AND NUMERICAL METHODS FOR ENGINEERS	9			Compulsory
<i>Teaching unit of Advanced mathematical and numerical methods for engineers</i>				Compulsory
504434 - ADVANCED MATHEMATICAL METHODS FOR ENGINEERS	3	MAT/05	Related/Supplementary/Affine/Integrativa	Compulsory
504710 - NUMERICAL METHODS IN ENGINEERING SCIENCES	6	MAT/08	Related/Supplementary/Affine/Integrativa	Compulsory
507294 - INTRODUCTION TO QUANTUM MECHANICS	3	FIS/03	Related/Supplementary/Affine/Integrativa	Compulsory
504990 - INTEGRATED CIRCUIT DEVICES	9	ING-INF/01	Distinctive/Ingegneria elettronica	Compulsory
504435 - ANALOG INTEGRATED CIRCUITS	9	ING-INF/01	Distinctive/Ingegneria elettronica	Compulsory
504439 - RF MICROELECTRONICS	9	ING-INF/01	Distinctive/Ingegneria elettronica	Compulsory
505002 - ELECTRONIC INSTRUMENTATION AND TECHNOLOGIES	9	ING-INF/01	Distinctive/Ingegneria elettronica	Compulsory
504437 - MICROWAVES	9	ING-INF/02	Distinctive/Ingegneria elettronica	Compulsory
504440 - DIGITAL IC DESIGN	6	ING-INF/01	Distinctive/Ingegneria elettronica	Compulsory

2° Year - academic year 2025/2026 - 57 CFU

ATTIVITÀ FORMATIVA Courses	CFU cfu	Settore Scientifico Disciplinary Sector	TAF/Ambito TAF/Teaching Field	Tipo Insegnamento Course Type
One course among:				
509352 - INTEGRATED POWER MANAGEMENT	6	ING-INF/01	Distinctive/Ingegneria elettronica	Elective
504444 - ANTENNAS	6	ING-INF/02	Distinctive/Ingegneria elettronica	Elective
505021 - ELECTRO-OPTICAL INSTRUMENTATION	6	ING-INF/01	Distinctive/Ingegneria elettronica	Elective
509685 - ANALOG-DIGITAL INTERFACE CIRCUITS	6	ING-INF/01	Related/Supplementary/Affine/Integrativa	Compulsory
One course among:				
510150 - MICROSENSORS, INTEGRATED MICROSYSTEMS AND MEMS	6	ING-INF/01	Related/Supplementary/Affine/Integrativa	Elective
509686 - STATISTICAL SIGNAL PROCESSING	6	ING-INF/03	Related/Supplementary/Affine/Integrativa	Elective
FREE CHOICE FROM THE UNIVERSITY COURSE OFFER				
509352 - INTEGRATED POWER MANAGEMENT	6	ING-INF/01	Optional/A scelta dello studente	Elective
510152 - INTEGRATED PHOTONIC CIRCUITS	6	FIS/03	Optional/A scelta dello studente	Elective
504998 - DIGITAL COMMUNICATIONS	6	ING-INF/03	Optional/A scelta dello studente	Elective
505018 - SATELLITE DATA ANALYSIS	6	ING-INF/02	Optional/A scelta dello studente	Elective
505021 - ELECTRO-OPTICAL INSTRUMENTATION	6	ING-INF/01	Optional/A scelta dello studente	Elective
504717 - INDUSTRIAL CONTROL	6	ING-INF/04	Optional/A scelta dello	Elective

			studente		
507288 - INTERNET AND MULTIMEDIA	6	ING-INF/03	Optional/A scelta dello studente	Elective	
510150 - MICROSENSORS, INTEGRATED MICROSYSTEMS AND MEMS	6	ING-INF/01	Optional/A scelta dello studente	Elective	
505006 - MICROWAVE MEASUREMENTS	6	ING-INF/02	Optional/A scelta dello studente	Elective	
504464 - ORGANIZATION THEORY AND DESIGN	6	SECS-P/06	Optional/A scelta dello studente	Elective	
504462 - PROCESS CONTROL	6	ING-INF/04	Optional/A scelta dello studente	Elective	
504463 - ROBOT CONTROL	6	ING-INF/04	Optional/A scelta dello studente	Elective	
505017 - SATELLITE AND SPACE SYSTEMS	6	ING-INF/02	Optional/A scelta dello studente	Elective	
511768 - INDUSTRIAL LASER APPLICATIONS AND SAFETY	6	ING-IND/16	Optional/A scelta dello studente	Elective	
503188 - STRUMENTAZIONE BIOMEDICA LM	6	ING-INF/06	Optional/A scelta dello studente	Elective	
508744 - BIOELETTROMAGNETISMO APPLICATO	6	ING-INF/02	Optional/A scelta dello studente	Elective	
510443 - MACHINE LEARNING FOR EARTH OBSERVATION DATA PROCESSING AND FUSION	3	ING-INF/03	Optional/A scelta dello studente	Elective	
510775 - INTRODUCTION TO QUANTUM TECHNOLOGIES	3	FIS/03	Optional/A scelta dello studente	Elective	
510778 - CUBESATS AND SMALLSATS FOR EARTH OBSERVATION	3	ING-INF/03	Optional/A scelta dello studente	Elective	
511334 - THERMAL MANAGEMENT FOR INDUSTRIAL AND SPACE APPLICATIONS	6	ING-IND/10	Optional/A scelta dello studente	Elective	
511769 - FRONTIERS OF SPACEBORNE EARTH OBSERVATION	6	ING-INF/03	Optional/A scelta dello studente	Elective	
One course among:	3				
509536 - ITALIAN LANGUAGE FOR FOREIGN STUDENTS	3	NN	Other/Altre conoscenze utili per l'inserimento nel mondo del lavoro	Elective	
505013 - ADVANCED TOPICS IN MICROWAVE TECHNOLOGIES	3	ING-INF/02	Other/Altre conoscenze utili per l'inserimento nel mondo del lavoro	Elective	
501246 - ETICA AMBIENTALE	3	SECS-P/13	Other/Altre conoscenze utili per l'inserimento nel mondo del lavoro	Elective	
509379 - INDUSTRIAL TOPICS IN MICROELECTRONICS AND PHOTONICS	3	ING-INF/01	Other/Altre conoscenze utili per l'inserimento nel mondo del lavoro	Elective	
507220 - PLANNING, MANAGEMENT AND SUPPLY OF GOODS AND SERVICES	3	ING-IND/35	Other/Altre conoscenze utili per l'inserimento nel mondo del lavoro	Elective	
503327 - MASTER THESIS	24	PROFIN_S	Final Exam/Per la prova finale	Compulsory	

TRACK 02 - PHOTONICS

1° Year - academic year 2024/2025 - 63 CFU

ATTIVITÀ FORMATIVA Courses	CFU cfu	Settore Scientifico Disciplinary Sector	TAF/Ambito TAF/Teaching Field	Tipo Insegnamento Course Type
510810 - ADVANCED MATHEMATICAL AND NUMERICAL METHODS FOR ENGINEERS	9			Compulsory
<i>Teaching unit of Advanced mathematical and numerical methods for engineers</i>				Compulsory
504434 - ADVANCED MATHEMATICAL METHODS FOR		MAT/05	Related/Supplementar	Compulsory

	ENGINEERS			y/Affine/Integrativa	
	504710 - NUMERICAL METHODS IN ENGINEERING SCIENCES		MAT/08	Related/Supplementar y/Affine/Integrativa	Compulsory
504992 - OPTOELECTRONIC DEVICES		9	ING-INF/01	Distinctive/Ingegneria elettronica	Compulsory
508745 - INTRODUCTION TO QUANTUM MECHANICS AND QUANTUM TECHNOLOGIES		6	FIS/03	Related/Supplementar y/Affine/Integrativa	Compulsory
One course among:					
504444 - ANTENNAS		6	ING-INF/02	Distinctive/Ingegneria elettronica	Elective
510150 - MICROSENSORS, INTEGRATED MICROSYSTEMS AND MEMS		6	ING-INF/01	Distinctive/Ingegneria elettronica	Elective
504437 - MICROWAVES		9	ING-INF/02	Distinctive/Ingegneria elettronica	Compulsory
504994 - OPTICAL COMMUNICATIONS		9	ING-INF/01	Distinctive/Ingegneria elettronica	Compulsory
510153 - QUANTUM ELECTRONICS AND NONLINEAR OPTICS		9	FIS/03	Related/Supplementar y/Affine/Integrativa	Compulsory
504998 - DIGITAL COMMUNICATIONS		6	ING-INF/03	Related/Supplementar y/Affine/Integrativa	Compulsory

2° Year - academic year 2025/2026 - 57 CFU

ATTIVITÀ FORMATIVA Courses	CFU cfu	Settore Scientifico Disciplinary Sector	TAF/Ambito TAF/Teaching Field	Tipo Insegnamento Course Type
505021 - ELECTRO-OPTICAL INSTRUMENTATION	6	ING-INF/01	Distinctive/Ingegneria elettronica	Compulsory
505015 - INDUSTRIAL LASER DESIGN	6	ING-INF/01	Distinctive/Ingegneria elettronica	Compulsory
510152 - INTEGRATED PHOTONIC CIRCUITS	6	FIS/03	Related/Supplementar y/Affine/Integrativa	Compulsory
FREE CHOICE FROM THE UNIVERSITY COURSE OFFER	12			
504999 - ANTENNAS AND PROPAGATION	9	ING-INF/02	Optional/A scelta dello studente	Elective
504717 - INDUSTRIAL CONTROL	6	ING-INF/04	Optional/A scelta dello studente	Elective
507288 - INTERNET AND MULTIMEDIA	6	ING-INF/03	Optional/A scelta dello studente	Elective
510150 - MICROSENSORS, INTEGRATED MICROSYSTEMS AND MEMS	6	ING-INF/01	Optional/A scelta dello studente	Elective
505006 - MICROWAVE MEASUREMENTS	6	ING-INF/02	Optional/A scelta dello studente	Elective
502987 - OPTOELETTRONICA BIOMEDICA	6	ING-INF/01	Optional/A scelta dello studente	Elective
504464 - ORGANIZATION THEORY AND DESIGN	6	SECS-P/06	Optional/A scelta dello studente	Elective
504462 - PROCESS CONTROL	6	ING-INF/04	Optional/A scelta dello studente	Elective
505018 - SATELLITE DATA ANALYSIS	6	ING-INF/02	Optional/A scelta dello studente	Elective
504463 - ROBOT CONTROL	6	ING-INF/04	Optional/A scelta dello studente	Elective
505017 - SATELLITE AND SPACE SYSTEMS	6	ING-INF/02	Optional/A scelta dello studente	Elective
511768 - INDUSTRIAL LASER APPLICATIONS AND SAFETY	6	ING-IND/16	Optional/A scelta dello studente	Elective
503188 - STRUMENTAZIONE BIOMEDICA LM	6	ING-INF/06	Optional/A scelta dello studente	Elective
509685 - ANALOG-DIGITAL INTERFACE CIRCUITS	6	ING-INF/01	Optional/A scelta dello studente	Elective
508744 - BIOELETTRROMAGNETISMO APPLICATO	6	ING-INF/02	Optional/A scelta dello studente	Elective
510154 - RETRIEVAL OF BIOPHYSICAL PARAMETERS FROM	3	ING-INF/03	Optional/A scelta dello	Elective

OPTICAL AND RADAR DATA			studente	
510155 - HYPERSPECTRAL DATA PROCESSING	3	ING-INF/03	Optional/A scelta dello studente	Elective
510156 - SAR DIFFERENTIAL INTERFEROMETRY AND TOMOGRAPHY	3	ING-INF/03	Optional/A scelta dello studente	Elective
510443 - MACHINE LEARNING FOR EARTH OBSERVATION DATA PROCESSING AND FUSION	3	ING-INF/03	Optional/A scelta dello studente	Elective
510778 - CUBESATS AND SMALLSATS FOR EARTH OBSERVATION	3	ING-INF/03	Optional/A scelta dello studente	Elective
511334 - THERMAL MANAGEMENT FOR INDUSTRIAL AND SPACE APPLICATIONS	6	ING-IND/10	Optional/A scelta dello studente	Elective
511769 - FRONTIERS OF SPACEBORNE EARTH OBSERVATION	6	ING-INF/03	Optional/A scelta dello studente	Elective
One course among:	3			
509536 - ITALIAN LANGUAGE FOR FOREIGN STUDENTS	3	NN	Other/Altre conoscenze utili per l'inserimento nel mondo del lavoro	Elective
505013 - ADVANCED TOPICS IN MICROWAVE TECHNOLOGIES	3	ING-INF/02	Other/Altre conoscenze utili per l'inserimento nel mondo del lavoro	Elective
509379 - INDUSTRIAL TOPICS IN MICROELECTRONICS AND PHOTONICS	3	ING-INF/01	Other/Altre conoscenze utili per l'inserimento nel mondo del lavoro	Elective
501246 - ETICA AMBIENTALE	3	SECS-P/13	Other/Altre conoscenze utili per l'inserimento nel mondo del lavoro	Elective
507220 - PLANNING, MANAGEMENT AND SUPPLY OF GOODS AND SERVICES	3	ING-IND/35	Other/Altre conoscenze utili per l'inserimento nel mondo del lavoro	Elective
503327 - MASTER THESIS	24	PROFIN_S	Final Exam/Per la prova finale	Compulsory

TRACK 03 - SPACE COMMUNICATION AND SENSING

1° Year - academic year 2024/2025 - 63 CFU

ATTIVITÀ FORMATIVA Courses		CFU cfu	Settore Scientifico Disciplinary Sector	TAF/Ambito TAF/Teaching Field	Tipo Insegnamento Course Type
510810 - ADVANCED MATHEMATICAL AND NUMERICAL METHODS FOR ENGINEERS		9			Compulsory
	<i>Teaching unit of Advanced mathematical and numerical methods for engineers</i>				Compulsory
	504434 - ADVANCED MATHEMATICAL METHODS FOR ENGINEERS	3	MAT/05	Related/Supplementary/Affine/Integrativa	Compulsory
	504710 - NUMERICAL METHODS IN ENGINEERING SCIENCES	6	MAT/08	Related/Supplementary/Affine/Integrativa	Compulsory
505018 - SATELLITE DATA ANALYSIS		9	ING-INF/02	Distinctive/Ingegneria elettronica	Compulsory
508745 - INTRODUCTION TO QUANTUM MECHANICS AND QUANTUM TECHNOLOGIES		6	FIS/03	Related/Supplementary/Affine/Integrativa	Compulsory
504999 - ANTENNAS AND PROPAGATION		9	ING-INF/02	Distinctive/Ingegneria elettronica	Compulsory
504437 - MICROWAVES		9	ING-INF/02	Distinctive/Ingegneria elettronica	Compulsory
One course among:					
504994 - OPTICAL COMMUNICATIONS		9	ING-INF/01	Distinctive/Ingegneria elettronica	Elective
504439 - RF MICROELECTRONICS		9	ING-INF/01	Distinctive/Ingegneria elettronica	Elective
509686 - STATISTICAL SIGNAL PROCESSING		6	ING-INF/03	Related/Supplementary/Affine/Integrativa	Compulsory

504998 - DIGITAL COMMUNICATIONS	6	ING-INF/03	Related/Supplementary/Affine/Integrativa	Compulsory

2° Year - academic year 2025/2026 - 57 CFU

ATTIVITÀ FORMATIVA Courses	CFU cfu	Settore Scientifico Disciplinary Sector	TAF/Ambito TAF/Teaching Field	Tipo Insegnamento Course Type
505017 - SATELLITE AND SPACE SYSTEMS	6	ING-INF/02	Distinctive/Ingegneria elettronica	Compulsory
505006 - MICROWAVE MEASUREMENTS	6	ING-INF/02	Distinctive/Ingegneria elettronica	Compulsory
507214 - WIRED AND WIRELESS COMMUNICATION SYSTEMS	6	ING-INF/03	Related/Supplementary /Affine/Integrativa	Compulsory
FREE CHOICE FROM THE UNIVERSITY COURSE OFFER	12			
505021 - ELECTRO-OPTICAL INSTRUMENTATION	6	ING-INF/01	Optional/A scelta dello studente	Elective
504717 - INDUSTRIAL CONTROL	6	ING-INF/04	Optional/A scelta dello studente	Elective
507288 - INTERNET AND MULTIMEDIA	6	ING-INF/03	Optional/A scelta dello studente	Elective
510150 - MICROSENSORS, INTEGRATED MICROSYSTEMS AND MEMS	6	ING-INF/01	Optional/A scelta dello studente	Elective
504464 - ORGANIZATION THEORY AND DESIGN	6	SECS-P/06	Optional/A scelta dello studente	Elective
504462 - PROCESS CONTROL	6	ING-INF/04	Optional/A scelta dello studente	Elective
504463 - ROBOT CONTROL	6	ING-INF/04	Optional/A scelta dello studente	Elective
508745 - INTRODUCTION TO QUANTUM MECHANICS AND QUANTUM TECHNOLOGIES	6	FIS/03	Optional/A scelta dello studente	Elective
511768 - INDUSTRIAL LASER APPLICATIONS AND SAFETY	6	ING-IND/16	Optional/A scelta dello studente	Elective
503188 - STRUMENTAZIONE BIOMEDICA LM	6	ING-INF/06	Optional/A scelta dello studente	Elective
508744 - BIOELETTROMAGNETISMO APPLICATO	6	ING-INF/02	Optional/A scelta dello studente	Elective
510161 - REMOTE SENSING FOR WATER APPLICATIONS	3	ING-INF/03	Optional/A scelta dello studente	Elective
510162 - REMOTE SENSING FOR WILDFIRE APPLICATIONS	3	ING-INF/03	Optional/A scelta dello studente	Elective
510154 - RETRIEVAL OF BIOPHYSICAL PARAMETERS FROM OPTICAL AND RADAR DATA	3	ING-INF/03	Optional/A scelta dello studente	Elective
510155 - HYPERSPECTRAL DATA PROCESSING	3	ING-INF/03	Optional/A scelta dello studente	Elective
510156 - SAR DIFFERENTIAL INTERFEROMETRY AND TOMOGRAPHY	3	ING-INF/03	Optional/A scelta dello studente	Elective
510163 - PROCESSING OF MULTI-FREQUENCY SAR IMAGES	3	ING-INF/03	Optional/A scelta dello studente	Elective
510443 - MACHINE LEARNING FOR EARTH OBSERVATION DATA PROCESSING AND FUSION	3	ING-INF/03	Optional/A scelta dello studente	Elective
510778 - CUBESATS AND SMALLSATS FOR EARTH OBSERVATION	3	ING-INF/03	Optional/A scelta dello studente	Elective
505021 - ELECTRO-OPTICAL INSTRUMENTATION	6	ING-INF/01	Optional/A scelta dello studente	Elective
511334 - THERMAL MANAGEMENT FOR INDUSTRIAL AND SPACE APPLICATIONS	6	ING-IND/10	Optional/A scelta dello studente	Elective
511769 - FRONTIERS OF SPACEBORNE EARTH OBSERVATION	6	ING-INF/03	Optional/A scelta dello studente	Elective
One course among:	3			
509536 - ITALIAN LANGUAGE FOR FOREIGN STUDENTS	3	NN	Other/Altre conoscenze utili per l'inserimento nel mondo del lavoro	Elective
505013 - ADVANCED TOPICS IN MICROWAVE TECHNOLOGIES	3	ING-INF/02	Other/Altre	Elective

			conoscenze utili per l'inserimento nel mondo del lavoro	
509379 - INDUSTRIAL TOPICS IN MICROELECTRONICS AND PHOTONICS	3	ING-INF/01	Other/Altre conoscenze utili per l'inserimento nel mondo del lavoro	Elective
501246 - ETICA AMBIENTALE	3	SECS-P/13	Other/Altre conoscenze utili per l'inserimento nel mondo del lavoro	Elective
507220 - PLANNING, MANAGEMENT AND SUPPLY OF GOODS AND SERVICES	3	ING-IND/35	Other/Altre conoscenze utili per l'inserimento nel mondo del lavoro	Elective
503327 - MASTER THESIS	24	PROFIN_S	Final Exam/Per la prova finale	Compulsory

EVENTUALI ESAMI IN SOVRANNUMERO (MAX 24 CFU)

POSSIBLE EXTRA EXAMS (MAX 24 CFU)

ATTIVITÀ FORMATIVA <i>Courses</i>	CFU <i>Cfu</i>	SETTORE <i>Sector</i>	YEAR <i>Year</i>

[Catalogo degli insegnamenti](#)

[Courses Catalogue](#)

Data / *Date*.....

Firma dello studente / *Student's signature*