

Manifesto Laurea Triennale in Ingegneria Informatica, delle Comunicazioni ed Elettronica - Anno Accademico 2023-2024 (coorte 22-23 2° anno/coorte 23-24 1° anno)

Computer, Communications and Electronic Engineering, a.y. 2023-2024

The education activities laid out in the Regolamento Didattico to earn the degree include:

- (1) Mandatory courses for a total of 72 credits.
- (2) Cross-disciplinary courses for a total of 42 credits.
- (3) Elective courses characterizing each of the areas of Computer, Communications and Electronic Engineering, for a total of 36 credits.
- (4) Free-choice courses for a total of 12 credits.
- (5) Complementary education activities (English language, internship, final thesis) for a total of 18 credits.

The following table reports a standard proposed study plan to have a balanced number of CFUs in the six semesters.

Class of education activity	Year	Semester	Number of CFUs
(1) Mandatory courses	1	I	30
(1) Mandatory courses		II	30
(1) Mandatory courses	2	I	6
(2) Cross-disciplinary courses			24
(2) Cross-disciplinary courses	2	II	12
(3) Corsi caratterizzanti il percorso e/o Corsi a scelta			18
(2) Cross-disciplinary courses	3	I	6
(3) Corsi caratterizzanti il percorso e/o Corsi a scelta			24
(1) Mandatory courses			6
(3) Corsi caratterizzanti il percorso e/o Corsi a scelta	3	II	6
(5) Attività formative di completamento			18

AD	CORSO	SSD	CFU	TAF	ANNO	SEMESTRE	CREDITI DA SCEGLIERE	LINGUA	NOTE	Docente TITOLARE COGNOME	Docente TITOLARE NOME	
Code ESSE3	COURSES	ACADEMIC DISCIPLINE	CREDITS	TRAINING ACTIVITY	YEAR	SEMESTER	CREDITS TO		NOTES	PROFESSOR		
Mandatory courses							72					
The following courses are mandatory												
146055	Calculus 1	MAT/05	12	Base/A1	1	1		INGL		Pugliese	Andrea	
146056	Geometry and Linear Algebra	MAT/03	6	Base/A1	1	1		INGL		Occhetta	Gianluca	
146140	Computer Programming 1	ING-INF/05	12	Base/A1	1	1		INGL		Marchetto	Alessandro	
146141	Calculus 2	MAT/05	6	Base/A1	1	2		INGL	*	Saracco	Giorgio	
146060	Probability	MAT/06	6	Affine	1	2		INGL		Bonaccorsi	Stefano	
146061	Physics	FIS/01	12	Base/A2	1	2		INGL		Haase	Albrecht	
146062	Computer Programming 2	INF/01	6	Affine	1	2		INGL		Marchese	Maurizio	
146142	Physics 2	FIS/01	6	Base/A2	2	1		INGL		Hauke	Phillip	
146143	Business Organization and Management	SECS-P/10	6	Affine	3	2		INGL		Chatterjee	Ujjal Kanti	
(*) 140017 Calculus 2 - Esame propedeutico: 146055 Calculus 1												
Mandatory cross-disciplinary courses							18					
Computer Engineering												
146144	Computer architectures and programming (Module 1: Advanced Programming)	ING-INF/05	12	Caratt./B2	2	1		INGL		Patrignani	Marco	
	Computer architectures and programming (Module 2: Computer Architectures)	ING-INF/05		Caratt./B2	2	2		INGL		Yildirim	Kasim Sinan	
145993	Databases	ING-INF/05	6	Caratt./B2	3	1		INGL		Velegrakis	Yannis	
Communications Engineering												
146145	Fundamentals of communications (Module 1: Signal processing)	ING-INF/03	12	Caratt./B3	2	1		INGL		Sacchi	Claudio	
	Fundamentals of communications (Module 2: Networking)	ING-INF/03		Caratt./B3	2	1		INGL		Segata	Michele	
Electronic Engineering												
146146	Fundamentals of electronics (Module 1: Logic networks)	ING-INF/01	12	Caratt./B1	2	1		INGL		Velha	Philippe	
	Fundamentals of electronics (Module 2: Analog electronics)	ING-INF/01		Caratt./B1	2	2		INGL		Velha	Philippe	
Choose 12 credits for each of the following three areas							36					
Computer engineering area												
Select 12 credits from the following courses												
145833	Introduction to machine learning	ING-INF/05	6	Caratt./B2	2	2		INGL		Battiti	Roberto	
146147	Operating systems	ING-INF/05	12	Caratt./B2	2	2		INGL		TBD		
146130	Fundamentals of robotics	ING-INF/05	12	Caratt./B2	3	1		INGL		Palopoli	Luigi	
145996	Embedded Software for the Internet of Things	ING-INF/05	6	Caratt./B2	3	1		INGL		Yildirim	Kasim Sinan	
146148	Software engineering	ING-INF/05	12	Caratt./B2	2	2		INGL		Vella	Flavio	
Communications Engineering Area												
Select 12 credits from the following courses												
146069	Next generation networks	ING-INF/03	6	Caratt./B3	3	1		INGL		Segata	Michele	
146135	Digital signal coding	ING-INF/03	6	Caratt./B3	3	1		INGL		Melgani	Farid	
146134	Vision and recognition	ING-INF/03	6	Caratt./B3	3	1		INGL		Conci	Nicola	
146136	Remote Sensing and Radar	ING-INF/03	6	Caratt./B3	3	1		INGL		Bruzzone	Lorenzo	
Electronic Engineering Area												
Select 12 credits from the following courses												
146138	Advanced logic design	ING-INF/01	6	Caratt./B1	2	2		INGL		Passerone	Roberto	
146163	Basics of optoelectronics	ING-INF/01	6	Caratt./B1	3	1		INGL		Velha	Philippe	
146198	High-Frequency Circuits for Systems-on-Chip	ING-INF/01	6	Caratt./B1	3	1		INGL		Oliveri	Giacomo	
146209	Introduction to Parallel Computing	ING-INF/01	6	Caratt./B1	3	1		INGL		Vella	Flavio	
146150	Digital electronic circuits	ING-INF/01	6	Caratt./B1	3	2		INGL		TBD		
Free-choice courses							12					
146070	Thesis/Prova finale						6					
146071	Internship/Tirocini formativi e di orientamento						9					
140189	Prova di conoscenza lingua italiana (for foreign students)											

NUM-DECE Electronics Curr Engineering iculum - Academic Year 2023-2024

INDEX	COURSES	CREDITS*	TYPE**	CFU	YEAR	SEMESTER
Mandatory courses, Mandatory cross-disciplinary courses						
MATH101	Calculus 1b	3	Mandatory cross-disciplinary courses	6	1	2
MATH181	Multivariable calculus	3	Mandatory cross-disciplinary courses	6	2	1
MATH100	Linear algebra 1	3	Mandatory cross-disciplinary courses	6	1	1
CSII200	Introduction to Algorithms	3	Mandatory cross-disciplinary courses	6	1	1
CSII201	Programming language	3	Mandatory cross-disciplinary courses	6	1	2
MATH183	Ordinary differential equations	3	Mandatory cross-disciplinary courses	6	2	2
APMA280	Probability and random process	3	Mandatory cross-disciplinary courses	6	3	1
PHYS101	Physics	3	Mandatory cross-disciplinary courses	6	1	1
PHYS180	General physics for engineers	3	Mandatory	6	1	2
ICSI201	Object-Oriented Programming	3	Mandatory cross-disciplinary courses	6	2	2
EENG203	Electric circuits	3	Mandatory	6	1	2
MNGT101	Business and society	3	Mandatory cross-disciplinary courses	6	1	1
Mandatory cross-disciplinary courses						
ICSI315	Windows Programming	3	Elective (Computer Engineering area)	6	2	2
ECEN414	Computer organisation	3	Mandatory	6	4	1
CSII202	Database fundamentals	3	Free-choice	6	3	1
ECEN201	Signals and systems	3	Mandatory	6	2	1
ECEN213	Computer networks	3	Mandatory	6	2	1
ECEN214	Digital system	3	Mandatory	6	2	1
EENG202	Fundamentals of electronics	3	Mandatory	6	1	2
Choose 12 credits for each of the following three areas						
ECEN416	Machine learning in the automation system	3	Elective (Electronic Engineering Area)	6	3	2
ICSI207	Theory of operating systems	3	Free-choice	6	3	2
ECEN472	ARM architecture and Linux operating system	3	Elective (Electronic Engineering Area)	6	4	1
ECEN216	Sensor and interfacing technique	3	Elective (Electronic Engineering Area)	6	4	2
ECEN419	Robotics	3	Elective (Electronic Engineering Area)	6	4	2
ECEN314	Embedded system	3	Mandatory (Electronic Engineering Area)	6	3	1
ICSI304	Software Design And Architecture	3	Free-choice	6	4	1
ICSI486	Software construction	3	Free-choice	6	4	2
ECEN462	Next generation computer networks	3	Free-choice	6	3	1
ECEN211	Digital signal processing	3	Mandatory	6	4	1
ECEN411	Digital image processing	3	Elective (Electronic Engineering Area)	6	3	1
ECEN413	Radar and remote sensing	3	Elective (Electronic Engineering Area)	6	4	1
ECEN312	Digital System Design	3	Mandatory	6	3	1
ECEN516	Photonics and optical devices	3	Free-choice (Physics science area)	6	4	2
ECEN458	High-Frequency Integrated Circuits	3	Free-choice (Physics science area)	6	4	2
ICSI464	Parallel computing	3	Free-choice	6	4	1
ECEN420	VLSI design		Elective (Electronic Engineering Area)	6	2	1
Complementary education activities						
THES411	Thesis	3	Mandatory	6	4	1,2
ECEN391	Project work	2	Mandatory	4	3	2
INTE391	Internship	1	Mandatory	6	4	1

145326	C1 English		3	ENGP108	English 8 (C1, Pre-advanced)		3	Mandatory cross-disciplinary courses	6	1	1
145641	Technical English										
			TOT				180				

Gli studenti italiani devono selezionare uno dei due corsi di inglese. Gli studenti stranieri che non hanno la possibilità di comprovare la conoscenza della lingua italiana, dovranno inserire l'esame di italiano.

(* Selezionare 12 crediti scelti liberamente fra i corsi offerti dall'Università di Trento. Tali crediti possono essere acquisiti sia tramite 2 corsi da 6 CFU che 1 solo corso da 12 CFU. I corsi di questo manifesto sono approvati automaticamente. In tutti gli altri casi, è necessaria la compilazione di un piano di studio cartaceo che sarà valutato dall'apposita commissione.

DA REGOLAMENTO DIDATTICO, SI RICORDA CHE:
L'accesso alle prove di esame degli insegnamenti impartiti negli anni successivi al primo è consentito solo previa acquisizione di almeno 18 CFU corrispondenti a insegnamenti dei settori scientifico disciplinari MAT03-05 e FIS01.
Gli esami del secondo anno sono consentiti soltanto a coloro che hanno soddisfatto il requisito di conoscenza della lingua inglese livello B2.

* 1 NUM credit is equal to 2 ECTS (=CFU), according to Rectoral Decree N°A/361 of 02 Dec, 2021

** Course types in the Computer Science program of the DICS.