

STUDY PROGRAMME CURRICULUM ELECTRICAL ENGINEERING

2023/2024

Name of study programme	Electrical engineering
Programme characteristics	
Type	academic
Cycle	bachelor
University of Ljubljana members	• Faculty of Electrical Engineering, Tržaška cesta 25, 1000 Ljubljana, Slovenija

Control systems (direction/track)

Year 3

	University Course Code	Course title	Lecturers	Contact hours					Individual student work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study					
1.	0102105	Linear Systems Analysis	Miran Buermen	45		45			60	150	6	1st semester	no
2.	0102106	Control Systems Instrumentation	Aleš Belič, Sašo Blažič	45		45			60	150	6	1st semester	no
3.	0045829	Introduction to Robotics	Marko Munih	30		30			65	125	5	1st semester	no
4.	0102108	Signals	Vitomir Štruc	45		30			50	125	5	1st semester	no
5.	0082589	Elective course		30		30			65	125	5	1st semester	yes
6.	0102110	Electronics in Automation	Boštjan Murovec	45		45			60	150	6	2nd semester	no
7.	0102111	Industrial Control Systems	Igor Škrjanc	45		45			60	150	6	2nd semester	no
8.	0102112	Computer Simulation	Borut Zupančič	45		30			50	125	5	2nd semester	no
9.	0082591	Elective general course		60		60			130	250	10	2nd semester	yes
10.	0112083	Diploma thesis							150	150	6	2nd semester	no
		Total		390	0	360	0	0	750	1500	60		

Electronics (direction/track)

Year 3

	University Course Code	Course title	Lecturers	Contact hours					Individual student work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study					
1.	0102096	Electronic Components and Sensors	Matej Možek	45		30			50	125	5	1st semester	no
2.	0045804	Optoelectronics	Janez Krč	30		30			65	125	5	1st semester	no
3.	0102098	Signals and Systems	Franc Smole	45		45			60	150	6	1st semester	no
4.	0102099	Linear Electronic Circuits	Andrej Žemva	45		45			60	150	6	1st semester	no
5.	0082589	Elective course		30		30			65	125	5	1st semester	yes
6.	0102101	Analog Electronic Circuits	Janez Krč	45		45			60	150	6	2nd semester	no
7.	0102102	Discrete Signals and Systems	Matija Pirc	45		45			60	150	6	2nd semester	no
8.	0102103	Speech and Image Technology	Vitomir Štruc	45		30			50	125	5	2nd semester	no
9.	0082591	Elective general course		60		60			130	250	10	2nd semester	yes
10.	0112083	Diploma thesis							150	150	6	2nd semester	no
		Total		390	0	360	0	0	750	1500	60		

Year 1

	University Course Code	Course title	Lecturers	Contact hours					Individual student work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study					
1.	0045835	Mathematics I	Gregor Dolinar	60		45			120	225	9	1st semester	no
2.	0045837	Mechanics and thermodynamics	Aleš Igljč	60		45			95	200	8	1st semester	no
3.	0045838	Fundamentals of Electrical Engineering I	Iztok Humar,	60		45			95	200	8	1st semester	no

			Marko Meža										
4.	0045840	Introduction to Computer Programming	Iztok Fajfar	30		30			65	125	5	1st semester	no
5.	0045834	Atomics and optics	Aleš Igljč	60		45			95	200	8	2nd semester	no
6.	0045836	Mathematics II	Gregor Dolinar	60		45			120	225	9	2nd semester	no
7.	0045839	Fundamentals of Electrical Engineering II	Iztok Humar, Marko Meža	60		45			95	200	8	2nd semester	no
8.	0045841	Programming of Microcontrollers	Iztok Fajfar	30		30			65	125	5	2nd semester	no
Total				420	0	330	0	0	750	1500	60		

Year 2

				Contact hours									
University Course Code	Course title	Lecturers		Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	0045843	Digital Structures	Tadej Kotnik	45		45			85	175	7	1st semester	no
2.	0045848	Communication Systems	Janez Bešter	45		45			85	175	7	1st semester	no
3.	0045849	Mathematics III	Gregor Dolinar, Melita Hajdinjak	60		45			120	225	9	1st semester	no
4.	0045852	Measurements	Dušan Agrež, Janko Drnovšek	45		45			85	175	7	1st semester	no
5.	0045845	Electric Machines	Damijan Miljavec	45		45			85	175	7	2nd semester	no
6.	0045850	Mathematics IV	Gregor Dolinar, Melita Hajdinjak	45		30			75	150	6	2nd semester	no

7.	0045851	Measurement Instrumentation	Dušan Agrež, Janko Drnovšek	30		30			65	125	5	2nd semester	no
8.	0045853	Semiconductor Electronics	Franc Smole	45		45			85	175	7	2nd semester	no
9.	0082574	Elective course		30		30			65	125	5	2nd semester	yes
		Total		390	0	360	0	0	750	1500	60		

Power engineering and mechatronics (direction/track)

Year 3

	University Course Code	Course title	Lecturers	Contact hours					Individual student work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study					
1.	0102087	Electrical Power Networks and Devices	Boštjan Blažič	45		45			60	150	6	1st semester	no
2.	0102088	Electrical Machine Modelling	Damijan Miljavec	45		30			50	125	5	1st semester	no
3.	0045780	Fundamentals of Mechatronics	Vanja Ambrožič	30		30			65	125	5	1st semester	no
4.	0102090	Control Engineering	David Nedeljković, Vanja Ambrožič	60		30			60	150	6	1st semester	no
5.	0082589	Elective course		30		30			65	125	5	1st semester	yes
6.	0102092	Electric Power Systems	Miloš Pantoš	45		45			60	150	6	2nd semester	no
7.	0102093	Power Electronics	Danjel Vončina, Peter Zajec	60		30			60	150	6	2nd semester	no
8.	0102094	High Voltage Engineering	Igor Papič	30		45			50	125	5	2nd semester	no
9.	0082591	Elective general course		60		60			130	250	10	2nd semester	yes
10.	0112083	Diploma thesis							150	150	6	2nd semester	no

	Total	405	0	345	0	0	750	1500	60	
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Information and communication technologies (direction/track)

Year 3

	University Course Code	Course title	Lecturers	Contact hours					Individual student work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study					
1.	0102059	Electrodynamics	Matjaž Vidmar	45		45			60	150	6	1st semester	no
2.	0102060	Information Theory and Source Coding	Matija Pirc	45		30			50	125	5	1st semester	no
3.	0045744	Intelligent Systems	Marko Meža, Matej Zajc	45		15			65	125	5	1st semester	no
4.	0102062	Continuous Signals and Systems	Andrej Košir	45		45			60	150	6	1st semester	no
5.	0082589	Elective course		30		30			65	125	5	1st semester	yes
6.	0102064	Digital Signal Processing	Anton Umek	45		45			60	150	6	2nd semester	no
7.	0102065	Digital Communication	Sašo Tomažič	45		45			60	150	6	2nd semester	no
8.	0102066	Telecommunication Protocols	Grega Jakus	45		30			50	125	5	2nd semester	no
9.	0082591	Elective general course		60		60			130	250	10	2nd semester	yes
10.	0112083	Diploma thesis							150	150	6	2nd semester	no
		Total		405	0	345	0	0	750	1500	60		

Year 2, Programme related elective

	University Course Code	Course title	Lecturers	Contact hours					Individual student work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study					
1.	0082582	Automatic Control Systems	Gregor Klančar	45		15			65	125	5	2nd semester	yes

2.	0082583	Digital Electronic Systems	Andrej Trost	30		30			65	125	5	2nd semester	yes
3.	0082585	Energy and Environment	Marko Čepin	30		30			65	125	5	2nd semester	yes
4.	0082586	Information Systems	Sara Stančin	45		15			65	125	5	2nd semester	yes
Total				150	0	90	0	0	260	500	20		

Student selects one Programme related elective of 5 ECTS (4 contact weekly hours) from the above offer after consulting tutor and in relation to chosen orientation of study in study year 3. programme related elective ob vpisu.

Year 3, Programme related elective

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	0082593	Introduction to Robotics	Marko Munih	30		30			65	125	5	1st semester	yes
2.	0082594	Optoelectronics	Janez Krč	30		30			65	125	5	1st semester	yes
3.	0082597	Fundamentals of Mechatronics	Vanja Ambrožič	30		30			65	125	5	1st semester	yes
4.	0082598	Intelligent Systems	Marko Meža, Matej Zajc	45		15			65	125	5	1st semester	yes
5.	0082602	Numerical Methods	Nik Stopar	30		30			65	125	5	1st semester	yes
Total				165	0	135	0	0	325	625	25		

Student selects one Programme related elective of 3 ECTS (4 contact weekly hours) from the above offer after consulting tutor and in relation to chosen orientation of study in study year 3.

Year 3, Discipline related elective - module related

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective

1.	0102077	Module A: Virtual and Augmented Reality	Matjaž Mihelj, Samo Beguš	30		30			65	125	5	2nd semester	yes
2.	0082605	Module A: Imaging Informatics	Boštjan Likar	30		30			65	125	5	2nd semester	yes
3.	0082606	Module B: Designing Embedded Systems	Tadej Tuma	30		30			65	125	5	2nd semester	yes
4.	0082607	Module B: Programming Embedded Systems	Tadej Tuma	30		30			65	125	5	2nd semester	yes
5.	0082608	Module C: Low-Voltage Electrical Installations	Grega Bizjak	30		30			65	125	5	2nd semester	yes
6.	0082609	Module C: Programmable Control Systems	David Nedeljković	30		30			65	125	5	2nd semester	yes
7.	0082610	Module D: World Wide Web	Jaka Sodnik	45		15			65	125	5	2nd semester	yes
8.	0082611	Module D: Multimedia Systems	Janez Bešter, Matevž Pogačnik	45		15			65	125	5	2nd semester	yes
9.	0082612	Module E: Project management, innovation and teamwork	Damijan Miklavčič	30		30			65	125	5	2nd semester	yes
10.	0082613	Module E: Product Design and Development	Boštjan Likar	30		30			65	125	5	2nd semester	yes
Total				330	0	270	0	0	650	1250	50		

Please contact the faculty for more info about selection of modules and subjects.