

Univerza v Ljubljani  
Fakulteta za *elektrotehniko*



# Lecture syllabus 1st Cycle Academic Study Programme in Electrical Engineering 2019-2020

**Syllabus: 1<sup>st</sup> cycle academic study programme in Electrical Engineering**

<i>1<sup>st</sup> Year - 1<sup>st</sup> semester</i>										
No.	Study unit	Lecturer	Contact hours					Individual stud. work	Total hours	ECTS
			Lecture	Seminar	Tutorial and lab	work	other			
1	Mathematics I	Gregor Dolinar, Peter Šemrl	60	0	45			120	225	9
2	Mechanics and thermodynamics	Aleš Iglič	60	0	45			95	200	8
3	Fundamentals of Electrical Engineering I	Dejan Križaj	60	0	45			95	200	8
4	Introduction to Computer Programming	Iztok Fajfar	30	0	30			65	125	5
Total			210	0	165			375	750	30
Percentage								50	100	

Lecture syllabus 1st Cycle Academic Study Programme in Electrical Engineering 2019-2020

<i>1<sup>st</sup> Year - 2<sup>nd</sup> semester</i>										
No.	Study unit	Lecturer	Contact hours					Individual stud. work	Total hours	ECTS
			Lecture	Seminar	Tutorial and lab	work	other			
1	Mathematics II	Gregor Dolinar	60	0	45			120	225	9
2	Atomics and optics	Aleš Iglič	60	0	45			95	200	8
3	Fundamentals of Electrical Engineering II	Iztok Humar	60	0	45			95	200	8
4	Programming of Microcontrollers	Iztok Fajfar	30	0	30			65	125	5
Total			210	0	165			375	750	30
Percentage								50	100	

<i>2<sup>nd</sup> Year - 3<sup>th</sup> semester</i>										
No.	Study unit	Lecturer	Contact hours					Individual stud. work	Total hours	ECTS
			Lecture	Seminar	Tutorial and lab	work	other			
1	Mathematics III	Melita Hajdinjak	60	0	45			120	225	9
2	Measurements	Janko Drnovšek Dušan Agrež	45	0	45			85	175	7
3	Digital Structures	Tadej Kotnik	45	0	45			85	175	7
4	Communication Systems	Janez Bešter, Andrej Kos	45	0	45			85	175	7
Total			195	0	180			375	750	30
Percentage								50	100	

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<i>2<sup>nd</sup> Year - 4<sup>th</sup> semester</i>										
No.	Study unit	Lecturer	Contact hours					Individual stud. work	Total hours	ECTS
			Lecture	Seminar	Tutorial and lab	work	other			
1	Mathematics IV	Melita Hajdinjak	45	0	30			75	150	6
2	Measurement Instrumentation	Dušan Agrež Janko Drnovšek	30	0	30			65	125	5
3	Electrical Machines	Damijan Miljavec	45	0	45			85	175	7
4	Semiconductor Electronics	Franc Smole	45	0	45			85	175	7
5	Elective Professional Course 1							65	125	5
Total								375	750	30
Percentage								50	100	

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<b>3<sup>th</sup> Year - 5<sup>th</sup> semester: CONTROL SYSTEMS</b>										
No.	Study unit	Lecturer	Contact hours					Individual stud. work	Total hours	ECTS
			Lecture	Seminar	Tutorial and lab	work	other			
1	Control Systems Instrumentation	Sašo Blažič Aleš Belič	45	0	45			60	150	6
2	Systems Analysis	Miran Bürmen	45	0	45			60	150	6
3	Signals	France Mihelič	45	0	30			50	125	5
4	Introduction to Robotics	Marko Munih	30	0	30			65	125	5
5	Elective Professional Course 2		30	0	30			65	125	5
6	Diploma Thesis							75	75	3
<b>3<sup>th</sup> Year - 6<sup>th</sup> semester</b>										
7	Electronics in Automation	Boštjan Murovec	45	0	45			60	150	6
8	Industrial Control Systems	Igor Škrjanc	45	0	45			60	150	6
9	Computer Simulation	Borut Zupančič	45	0	30			50	125	5
10	Elective Course 3							130	250	10
11	Diploma Thesis							75	75	3
Total								750	1500	60
Percentage								50	100	

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<b>3<sup>th</sup> Year - 5<sup>th</sup> semester: ELECTRONICS</b>										
<b>No.</b>	<b>Study unit</b>	<b>Lecturer</b>	<b>Contact hours</b>					<b>Individual stud. work</b>	<b>Total hours</b>	<b>ECTS</b>
			<b>Lecture</b>	<b>Seminar</b>	<b>Tutorial and lab</b>	<b>work</b>	<b>other</b>			
1	Linear Electronics	Andrej Žemva	45	0	45			60	150	6
2	Signals and Systems	Franc Smole	45	0	45			60	150	6
3	Electronic Components and Sensors	Matej Možek	45	0	30			50	125	5
4	Optoelectronics	Janez Krč	30	0	30			65	125	5
5	Elective Professional Course 2		30	0	30			65	125	5
6	Diploma Thesis							75	75	3
<b>3<sup>th</sup> Year - 6<sup>th</sup> semester</b>										
7	Analog Electronic Circuits	Janez Krč	45	0	45			60	150	6
8	Discrete Signals and Systems	Andrej Levstek	45	0	45			60	150	6
9	Speech and Image Technology	France Mihelič	45	0	30			50	125	5
10	Elective Course 3							130	250	10
11	Diploma Thesis							75	75	3
<b>Total</b>								750	1500	60
<b>Percentage</b>								50	100	

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<b>3<sup>th</sup> Year - 5<sup>th</sup> semester: POWER ENGINEERING AND MECHATRONICS</b>										
No.	Study unit	Lecturer	Contact hours					Individual stud. work	Total hours	ECTS
			Lectur e	Semin ar	Tutori al and lab	work	other			
1	Electrical Power Networks and Devices	Boštjan Blažič	45	0	45			60	150	6
2	Control Engineering	David Nedeljković, Vanja Ambrožič	60	0	30			60	150	6
3	Electrical Machine Modelling	Damijan Miljavec	45	0	30			50	125	5
4	Fundamentals of Mechatronics	Vanja Ambrožič	30	0	30			65	125	5
5	Elective Professional Course 2		30	0	30			65	125	5
6	Diploma Thesis							75	75	3
<b>3<sup>th</sup> Year - 6<sup>th</sup> semester</b>										
7	Electrical Power Systems	Miloš Pantoš	45	0	45			60	150	6
8	Power Electronics	Danijel Vončina Peter Zajec	60	0	30			60	150	6
9	High Voltage Engineering	Boštjan Blažič	30	0	45			50	125	5
10	Elective Course 3							130	250	10
11	Diploma Thesis							75	75	3
Total								750	1500	60
Percentage								50	100	

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<b>3<sup>th</sup> Year - 5<sup>th</sup> semester: INFORMATION AND COMMUNICATION TECHNOLOGIES</b>										
<b>No.</b>	<b>Study unit</b>	<b>Lecturer</b>	<b>Contact hours</b>					<b>Individual stud. work</b>	<b>Total hours</b>	<b>ECTS</b>
			<b>Lecture</b>	<b>Seminar</b>	<b>Tutorial and lab</b>	<b>work</b>	<b>other</b>			
1	Continuous Signals and Systems	Andrej Košir	45	0	45			60	150	6
2	Electrodynamics	Matjaž Vidmar	45	0	45			60	150	6
3	Information Theory and Source Coding	Andrej Levstek	45	0	30			50	125	5
4	Intelligent Systems	Matej Zajc, Marko Meža	45	0	15			65	125	5
5	Elective Professional Course 2		30	0	30			65	125	5
	Diploma Thesis							75	75	3
<b>3<sup>th</sup> Year - 6<sup>th</sup> semester</b>										
6	Digital Signal Processing	Sašo Tomažič	45	0	45			60	150	6
7	Digital Communication	Sašo Tomažič	45	0	45			60	150	6
8	Telecommunication Protocols	Grega Jakus	45	0	30			50	125	5
9	Elective Course 3							130	250	10
	Diploma Thesis							75	75	3
<b>Total</b>								750	1500	
<b>Percentage</b>								50	100	



ELECTIVE COURSES										
No.	Study unit	Lecturer	Contact hours					Individual stud. work	Total hours	ECTS
			Lecture	Seminar	Tutorial and lab	work	other			
<b>Elective Professional Course 1</b>										
1	Automatic Control Systems	Borut Zupančič	45	0	15			65	125	5
2	Digital Electronic Systems	Andrej Trost	30	0	30			65	125	5
3	Energy and the Environment	Marko Čepin	30	0	30			65	125	5
4	Information Systems	Sara Stančin	45	0	15			65	125	5
<b>Elective Professional Course 2</b>										
5	Introduction to Robotics	Marko Munih	30	0	30			65	125	5
6	Optoelectronics	Janez Krč	30	0	30			65	125	5
7	Fundamentals of Mechatronics	Vanja Ambrožič	30	0	30			65	125	5
8	Intelligent Systems	Matej Zajc Marko Meža	45	0	15			65	125	5
9	Numerical Methods	Marjetka Knez	30	0	30			65	125	5
<b>Elective Course 3</b>										
10	Module A: Virtual Reality	Matjaž Mihelj	30	0	30			65	125	5
11	Module A: Imaging Informatics	Boštjan Likar	30	0	30			65	125	5
12	Module B: Designing Embedded Systems	Tadej Tuma	30	0	30					
13	Module B: Programming Embedded Systems	Tadej Tuma	30	0	30			65	125	5
14	Module C: Low-Voltage Electrical Installations	Grega Bizjak	30	0	30			65	125	5

ELECTIVE COURSES										
No.	Study unit	Lecturer	Contact hours					Individual stud. work	Total hours	ECTS
			Lecture	Seminar	Tutorial and lab	work	other			
15	Module C: Programmable Control Systems	David Nedeljković	30	0	30			65	125	5
16	Module D: World Wide Web	Jaka Sodnik	45	0	15			65	125	5
17	Module D: Multimedia Systems	Janez Bešter Matevž Pogačnik	45	0	15			65	125	5
18	Module E: Project Management, Innovation and Teamwork	Damijan Miklavčič	30	0	30			65	125	5
19	Module E: Product Design and Development	Boštjan Likar	30	0	30			65	125	5