

**STRUCTURE OF ACADEMIC PROGRAM – FIRST CYCLE OF FOUR YEAR
STUDIES
MECHATRONICS AND ROBOTICS**

Course programs, first year – first semester

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1.	2FI100112	Mathematics 1	8	3+2+2	240
2.	2ET110118	Electrotehnics 1	8	3+2+2	240
3.	2ET110218	Technical Mechanics	6	2+2+1	180
4.		Optional faculty subject from list no.1-1	4	2+1+1	120
5.		Optional faculty subject from list no.1-2	4	2+1+1	120
6.	UGD102712	Sport and Recreation			
Total ECTS			30		900

List no.1-1 of optional faculty subjects(1 subject is selected)

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1.	2FI100212	Programming basics	4	2+1+1	120
2.	2FI133412	Programming language	4	2+1+1	120

List no.1-2 of optional faculty subjects(1 subject is selected)

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1.	2FI110212	Linear algebra	4	2+1+1	120
2.	2FI130412	Discrete mathematics	4	2+1+1	120

Course programs, first year – second semester

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2FI100412	Mathematics 2	8	3+2+2	240
2	2ET100512	Electrotechnics 2	6	2+2+1	180
3	2FI110418	Object Oriented Programming	6	2+2+1	180
4		Optional faculty subject from list no.2-1	4	2+1+1	120
5		Optional university subject from list no.9	4	0+0+4	120

		Practical teaching*	2		60
Total ECTS			30		900

* **Practical teaching** – compulsory realization for transfer to the next academic year, for only 1 cycle of study . Performed for 30 days.

List no.2-1 of optional faculty subjects(1 subject is selected)

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2ET100712	CAD/CAM	4	2+1+1	120
2	2ET110318	Компјутерски алатки во електро инженерство	4	2+1+1	120

Course programs, second year – third semester

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2FI110012	Mathematics 3	8	3+2+2	240
2	2ET100812	Electrical measurements	6	2+2+1	180
3	2ET100912	Electronics	8	3+2+2	240
4		Optional faculty subject from list no.3-1	4	2+1+1	120
5		Optional faculty subject from list no.3-2	4	2+1+1	120
Total ECTS			30		900

List no.3-1 of optional faculty subjects(1 subject is selected)

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2ET110418	Digital signal processing	4	2+1+1	120
2	2ET110518	Signal Theory and Systems	4	2+1+1	120

List no.3-2 of optional faculty subjects(1 subject is selected)

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2ET101112	Electrical installations	4	2+1+1	120
2	2ET110618	Basics of energy conversion	4	2+1+1	120

Course programs, second year – fourth semester

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2ET101312	Basics of automatic management	8	3+2+2	240
2	2ET101412	Industrial electronics	6	2+2+1	180
3	2ET101512	Electric machines	6	2+2+1	180
4		Optional faculty subject from list no.4	4	2+1+1	120
5		Optional university subject from list no.9	4	0+0+4	120
		Practical teaching*	2		60
Total ECTS			30		900

* Practical teaching – compulsory realization for transfer to the next academic year, for only 1 cycle of study . Performed for 30 days.

List no.4 of optional faculty subjects(1 subject is selected)

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2FI123212	Probability and statistics	4	2+1+1	120
2	2FI131712	Theory of probability	4	2+1+1	120

Course programs, third year – fifth semester

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2ET110618	Micromachines	8	3+2+2	240
2	2ET101712	Logic circuits and discrete systems	8	3+2+2	240
3	2ET101812	Electricmotors drives	6	2+2+1	180
4		Optional faculty subject from list no.5-1	4	2+1+1	120
5		Optional faculty subject from list no.5-2	4	2+1+1	120
Total			30		900

List no.5-1 of optional faculty subjects(1 subject is selected)

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2ET110718	Intelligent measuring devices	4	2+1+1	120
2	2ET110818	Intelligent vehicles	4	2+1+1	120

List no.5-2 of optional faculty subjects(1 subject is selected)

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2ET110918	Cloud computing	4	2+1+1	120
2	2ET111018	Computer Architecture	4	2+1+1	120
3	2ET111118	Quality management	4	2+1+1	120

Course programs, third year – sixth semester

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2ET111218	Thermodynamics	6	2+2+1	180
2	2ET105112	Computer Process Management	8	3+2+2	240
3	2ET111318	Electromagnetics	6	2+2+1	180
4		Optional faculty subject from list no.6	4	2+1+1	120
5		Optional university subject from list no.9	4	0+0+4	120
		Practical teaching*	2		60
Total			30		900

* Practical teaching – compulsory realization for transfer to the next academic year, for only 1 cycle of study . Performed for 30 days.

List no.6 of optional faculty subjects(1 subject is selected)

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2ET111418	Smart power grids	4	2+1+1	120
2	2ET111518	Energetics and ecology	4	2+1+1	120

Course programs, fourth year – seventh semester

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2ET111618	Computer security	6	2+2+1	180
2	2ET111718	Human-computer interaction	8	3+2+2	240
3	2ET103112	Robotics and automation	8	3+2+1	240
4		Optional faculty subject from list no.7-1	4	2+1+1	120
5		Optional faculty subject from list no.7-2	4	2+1+1	120
Total			30		900

List no.7-1 of optional faculty subjects(1 subject is selected)

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2ET111818	Artificial intelligence	4	2+1+1	120
2	2ET111918	Nonlinear management systems	4	2+1+1	120

List no.7-2 of optional faculty subjects(1 subject is selected)

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2ET103412	Mobile platforms and applications	4	2+1+1	120
2	2ET103512	Internet technologies	4	2+1+1	120

Course programs, fourth year – eighth semester

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2ET103912	Mechatronics	6	2+2+1	180
2	2ET103712	Microcomputers and programmable controllers	6	2+2+1	180
3		Изборен факултетски предмет од листа бр.8	4	2+1+1	120
4		Optional faculty subject from list no.9	4	0+0+4	120
		Practical teaching- interdisciplinary project	4	2+1+1	120
5	2ET104012	Graduate thesis	6	2+2+1	180
Total			30		900

List no.8 of optional faculty subjects(1 subject is selected)

Row no.	Code on subject	Subjects	ECTS	Fund of classes	Total number of classes
1	2ET112018	Fuzzy logic	4	2+1+1	120
2	2ET112118	Industrial robots	4	2+1+1	120

List no.9 of optional subjects from the free list of University subjects for first cycle of studies (4 courses are selected)

Code	List of optional University subjects II, IV, VI и VIII semester			
	SUBJECT	Credits	Classes	Total
UGD100117	Macedonian literature and culture	4	0+0+4	120
UGD100217	Macedonian language, orthography and orthoepy	4	0+0+4	120
UGD100317	Ethics	4	0+0+4	120

UGD100417	History of Macedonia	4	0+0+4	120
UGD100517	Copyright	4	0+0+4	120
UGD100617	Tolerance and conflict resolution	4	0+0+4	120
UGD100717	Business Systems	4	0+0+4	120
UGD100817	Tourism industry	4	0+0+4	120
UGD100917	Entrepreneurship and Innovation	4	0+0+4	120
UGD101017	Management of self-development and behavior	4	0+0+4	120
UGD101117	Business Economics	4	0+0+4	120
UGD101217	Choral singing	4	0+0+4	120
UGD101317	Music and art	4	0+0+4	120
UGD101417	An Introduction to Film History	4	0+0+4	120
UGD101517	Dramaturgy	4	0+0+4	120
UGD101617	Basics of drawing	4	0+0+4	120
UGD101717	History of classical painting	4	0+0+4	120
UGD101817	Health promotion	4	0+0+4	120
UGD101917	Oral health and hygiene	4	0+0+4	120
UGD102017	Precious and semiprecious minerals	4	0+0+4	120
UGD102117	Earth science	4	0+0+4	120
UGD102217	Wildlife Science	4	0+0+4	120
UGD102317	Environmental Protection	4	0+0+4	120
UGD102417	Intelligent electronic components and devices	4	0+0+4	120
UGD102517	Experiment planning	4	0+0+4	120
UGD102617	History of clothing	4	0+0+4	120
UGD102717	Management and quality control	4	0+0+4	120
UGD102817	Informatics	4	0+0+4	120
UGD102917	Programming Basics	4	0+0+4	120