

Fundamental Domain of Ranking (FDR): Engineering Sciences  
Branch of Science (BS): Mechanical Engineering, Mechatronics, Industrial Engineering and Management  
Domain of ranking (DR): Mechatronics and Robotics  
Licence Domain (LD): Mechatronics and Robotics

Cod DFI	CodRSI	CodDII	CodDL
20	70	30	250

**CURRICULUM**  
Academic year 2015 - 2016

	YEAR I								YEAR II																											
	SEMESTER 1				SEMESTER 2				SEMESTER 3				SEMESTER 4																							
1.	Mathematical analysis				Special mathematics				Electrical engineering fundamentals				Thermotechniques																							
	L440.15.01.F1	E	4	28	28	0	0	DF	46	L440.15.02.F1	D	4	28	28	0	0	DF	46	L440.15.03.D1	E	3	28	0	14	0	DD	40	L440.15.04.D1	E	4	28	14	14	0	DD	48
2.	Algebra				Materials science				Computer assisted mathematics				Strength of materials II																							
	L440.15.01.F2	E	4	28	28	0	0	DF	46	L440.15.02.D2	E	5	42	0	28	0	DD	64	L440.15.03.F2	D	5	28	14	14	0	DF	64	L440.15.04.D2	D	4	28	14	14	0	DD	50
3.	Physics				Mechanical engineering fundamentals				Mechanics				Mechanisms II																							
	L440.15.01.F3	E	5	42	14	14	0	DF	60	L440.15.02.D3	E	5	28	28	0	0	DD	64	L440.15.03.D3	E	3	28	14	0	0	DD	36	L440.15.04.D3	D	6	28	0	14	14	DD	66
4.	Computer using and programming				Computer assisted technical graphics				Strength of materials I				Electronics fundamentals																							
	L440.15.01.F4	D	5	28	0	35	0	DF	60	L440.15.02.D4	E	5	28	0	35	0	DD	64	L440.15.03.D4	E	4	28	14	14	0	DD	46	L440.15.04.D4	E	3	28	0	14	0	DD	40
5.	Descriptive geometry and technical drawing				Mechanical technology				Mechanisms I				Automated systems theory																							
	L440.15.01.F5	D	5	28	0	35	0	DF	60	L440.15.02.D5	E	5	35	0	28	0	DD	64	L440.15.03.D5	E	5	28	14	14	0	DD	64	L440.15.04.D5	E	4	28	0	14	0	DD	48
6.	General chemistry				Culture and civilization				Fluids mechanics				Techniques and measurement systems																							
	L440.15.01.F6	E	3	28	0	14	0	DF	36	L440.15.02.C6	D	2	14	14	0	0	DC	20	L440.15.03.D6	D	4	28	14	14	0	DD	46	L440.15.04.D6	E	4	42	0	28	0	DD	50
7.	International languages				International languages				Programming II				Microeconomy																							
	L440.15.01.F7	D	2	0	28	0	0	DC	20	L440.15.02.C7	D	2	0	28	0	0	DC	20	L440.15.03.F7	D	4	28	0	28	0	DF	46	L440.15.04.C7	D	3	28	14	0	0	DC	40
8.	Sports				Sports				Sports				Sports																							
	L440.15.01.F8	D	2	0	14	0	0	DC		L440.15.02.C8	D	2	0	14	0	0	DC		L440.15.03.C8	D	2	0	14	0	0	DC		L440.15.04.C8	D	2	0	14	0	0	DC	
9.													Practical training 40 hours/sem.																							
																			L440.15.04.F9	C	2												DF			
total/ sem.	hours:	392		VPI:		328		hours:	378		VPI:		342		hours:	378		VPI:		342		hours:	378		VPI:		342									
	credits:	30		evaluations: 4E,4D		8		credits:	30		evaluations: 4E,4D		8		credits:	30		evaluations: 4E,4D		8		credits:	30		evaluations: 4E,4D		9									
total/ week	hours:	28						hours:	27						hours:	27						hours:	27													
	of which:		13	8	7	0	(c, s, l, p)	of which:		12,5	8	6,5	0	(c, s, l, p)	of which:		14	6	7	0	(c, s, l, p)	of which:		15	4	7	1	(c, s, l, p)								

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 Licence Domain (LD): Mechatronics and Robotics  
 Specialization (S): Robotics

Cod.DFI.	Cod.RSI.	Cod.DII.	Cod.DL.	Cod.S.
20	70	30	250	20

**CURRICULUM**  
 Academic year 2015 - 2016

	YEAR III										YEAR IV																									
	SEMESTER 5					SEMESTER 6					SEMESTER 7					SEMESTER 8																				
1.	Mechatronic constructive elements I					Mechatronic constructive elements II					Independent Optional Discipline 5 (set 5L.1.7)					Optional Embedded Discipline 1 (set 1P.1.8)																				
	L442.15.05.D1	E	5	28	0	14	14	DD	70	L442.15.06.D1	E	5	28	0	14	14	DD	70	L442.15.07.D1	E	5	28	0	14	14	DD	68	L442.15.08.S1	E	3	28	0	14	0	DS	40
2.	Bases of mechatronic systems					Bases of robotics					Independent Optional Discipline 6 (set 6L.1.7)					Optional Embedded Discipline 2 (set 2P.1.8)																				
	L442.15.05.S2	D	4	28	0	14	0	DS	52	L442.15.06.S2	E	5	28	0	14	14	DS	70	L442.15.07.D2	E	4	28	0	14	0	DD	44	L442.15.08.S2	E	1	14	0	14	0	DS	36
3.	Actuating systems I					Actuating systems II					Independent Optional Discipline 7 (set 7L.1.7)					Optional Embedded Discipline 3 (set 3P.1.8)																				
	L442.15.05.D3	E	5	28	0	14	14	DD	52	L442.15.06.D3	E	4	28	0	28	0	DD	48	L442.15.07.D3	D	4	28	0	28	0	DD	44	L442.15.08.S3	E	4	28	0	14	0	DS	44
4.	Management					Sensors and sensorial systems					Independent Optional Discipline 8 (set 8L.1.7)					Optional Embedded Discipline 4 (set 4P.1.8)																				
	L442.15.05.D4	D	2	14	14	0	0	DD	26	L442.15.06.D4	E	4	28	0	28	0	DD	48	L442.15.07.D4	E	4	28	0	14	0	DD	44	L442.15.08.S4	E	3	28	0	14	0	DS	36
5.	Acquisition systems, interfacing and virtual instrumentation					Marketing					Independent Optional Discipline 9 (set 9L.1.7)					Communication																				
	L442.15.05.D5	E	4	28	0	28	14	DD	52	L442.15.06.D5	D	2	14	14	0	0	DD	24	L442.15.07.S5	E	5	28	0	14	28	DS	68	L442.15.08.C5	D	2	14	14	0	0	DC	22
6.	Independent Optional Discipline 1 (set 1L.1.5)					Independent Optional Discipline 3 (set 3L.1.6)					Independent Optional Discipline 10 (set 10L.1.7)					Dissertation elaboration (**)																				
	L442.15.05.D6-ij	D	4	28	0	28	0	DD	52	L442.15.06.D6	D	4	28	0	28	0	DS	48	L442.15.07.D6	D	4	28	0	14	0	DD	44		D	5	0	0	0	182	DS	178
7.	Independent Optional Discipline 2 (set 2L.1.5)					Independent Optional Discipline 4 (set 4L.1.6)					Independent Optional Discipline 11 (set 11L.1.7)					Graduating exam (***)																				
	L442.15.05.D7-ij	E	4	28	0	28	0	DD	52	L442.15.06.S7	D	4	28	0	28	0	DS	48	L442.15.07.S7	D	4	28	0	28	0	DS	44		E	10						
8.	Practical training (100 hours)					Practical training (100 hours)																														
	L442.15.05.S8	C	3	0	0	0	0	DS		L442.15.06.S8	C	3	0	0	0	0	DS																			
9.																																				
total/sem.	hours:	364			VPI:	356			hours:	364			VPI:	356			hours:	364			VPI:	356			hours:	364			VPI:	356						
	credits:	30			evaluations:	4E,3D,1C			credits:	30			evaluations:	3E,4D,1C			credits:	30			evaluations:	4E,3D,1C			credits:	30			evaluations:	4E,2D,1C						
total/week	hours:	26							hours:	26							hours:	26							hours:	26										
	of which:					(c, s, l, p)			of which:					(c, s, l, p)			of which:					(c, s, l, p)			of which:					(c, s, l, p)						

\* duration 7 weeks x 26 hours of which practical training 2 weeks x 26 hours; \*\*consists of: a. evaluation of fundamental and speciality knowledge; b. public dissertation presentation.

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**OPTIONAL DISCIPLINES**  
Academic year 2015 - 2016

	YEAR III										YEAR IV																									
	SEMESTER 5					SEMESTER 6					SEMESTER 7					SEMESTER 8																				
1.	Opt. ind. 1.1 CAD (*)					Opt. ind. 3.1 Technical optics					Opt. ind. 5.1 Microcontrollers in mechanical engineering(*)					Opt. Emb.1.1 Manufacturing systems																				
	L442.15.05.D6-01	D	4	28	0	28	0	DD	52	L442.15.06.S6-01	D	4	28	0	28	0	DS	48	L442.15.07.D1-01	E	5	28	0	14	14	DD	68	L442.15.08.S1-01	E	3	28	0	14	0	DS	40
2.	Opt. ind. 1.2 Mechatronic systems dynamics					Opt. ind. 3.2 Photometry					Opt. ind. 5.2 Microcontrollers and microprocessors in robotics					Opt. Emb.1.2 Automated lines																				
	L442.15.05.D6-02	D	4	28	0	28	0	DD	52	L442.15.06.S6-02	D	4	28	0	28	0	DS	48	L442.15.07.D1	E	5	28	0	14	14	DD	68	L442.15.08.S1-	E	3	28	0	14	0	DS	40
3.	Opt. ind. 2.1 Digital electronics					Opt. ind. 4.1 Programming III – Visual Basic					Opt. ind. 6.1 PLC (*)					Opt. Emb.1.3 Flexible manufacturing systems																				
	L442.15.05.D7-01	D	4	28	0	28	0	DD	52	L442.15.06.S7-01	D	4	28	0	28	0	DS	48	L442.15.07.D2	E	4	28	0	14	0	DD	44	L442.15.08.S1-	E	3	28	0	14	0	DS	40
4.	Opt. ind. 2.2 High power electronics					Opt. ind. 4.2 Databases and distributed programming					Opt. ind. 6.2 Automates and microprogramming					Opt. Emb.2.1 CIM																				
	L442.15.05.D7-02	D	4	28	0	28	0	DD	52	L442.15.06.S7-02	D	4	28	0	28	0	DS	48	L442.15.07.D2	E	4	28	0	14	0	DD	44	L442.15.08.S2-	E	1	14	0	14	0	DS	36
5.											Opt. ind. 7.1 Driving systems in robotics (*)					Opt. Emb.2.2 Integrated manufacturing																				
																		L442.15.07.D3	D	4	28	0	28	0	DD	44	L442.15.08.S2-	E	1	14	0	14	0	DS	36	
6.											Opt. ind. 7.2 Programming of industrial robots					Opt. Emb. 2.3 Technology of robotized processes (*)																				
																		L442.15.07.D3	D	4	28	0	28	0	DD	44	L442.15.08.S2-	E	1	14	0	14	0	DS	36	
7.											Opt. ind. 8.1 Artificial intelligence (*)					Opt. Emb. 3.1 Teleoperation installations																				
																		L442.15.07.D4	E	4	28	0	14	0	DD	44	L442.15.08.S3-	E	4	28	0	14	0	DS	44	
8.											Opt. ind. 8.2 Systems based on knowledge					Opt. Emb. 3.2 Simulation of manufacturing systems																				
																		L442.15.07.D4	E	4	28	0	14	0	DD	44	L442.15.08.S3-	E	4	28	0	14	0	DS	44	
9.											Opt. ind. 9.1 Advanced robotics (*)					Opt. Emb. 3.3 Prostheses (*)																				
																		L442.15.07.S5-	E	5	28	0	14	28	DS	68	L442.15.08.S3-	E	4	28	0	14	0	DS	44	
10.											Opt. ind. 9.2 Robotic systems					Opt. Emb.4.1 Mobile robots																				
																		L442.15.07.S5-	E	5	28	0	14	28	DS	68	L442.15.08.S4-	E	3	14	0	14	0	DS	36	
11.											Opt. ind. 10.1 Manufacturing machines in automated processes (*)					Opt. Emb.4.2 Final effectors																				
																		L442.15.07.D6	D	4	28	0	14	0	DD	44	L442.15.08.S4-	E	3	14	0	14	0	DS	36	
12.											Opt. ind. 10.2 Integrated manufacturing					Opt. Emb.4.3 Service and control automats (*)																				
																		L442.15.07.D6	D	4	28	0	14	0	DD	44	L442.15.08.S4-	E	3	14	0	14	0	DS	36	
13.											Opt. ind. 11.1 Multirobot applications (*)																									
																		L442.15.07.S7-	D	4	28	0	28	0	DS	44										
14.											Opt. ind. 11.2 Planning of mobile robots' movement																									
																		L442.15.07.S7-	D	4	28	0	28	0	DS	44										

**Note:** Of each group of Optional Disciplines is activated a number of disciplines according to students' choice, number of students and budget.

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**FACULTATIVE DISCIPLINES**  
Academic year 2015 - 2016

		YEAR I										YEAR II																																												
		SEMESTER 1					SEMESTER 2					SEMESTER 3					SEMESTER 4																																							
1.		Psychology of education-F.I_1					Pedagogics I-F.I_2					Computer aided graphics-F.II_1					ANSYS-F.II.4																																							
		L440.15.01.f01	D	4	28	28	0	0	DC	10	L440.15.02.f01	D	4	28	28	0	0	DC	10	L440.15.03.f	D	3	14	0	28	0	DC	30	L440.15.04.f	D	3	0	0	42	0	DC	30																			
2.												Matlab-F.II.2 Pedagogics II-F.II.3					MS Office-F.II.5																																							
												L440.15.03.f					L440.15.04.f																																							
																	Social responsibility and civic activity																																							
																	L440.15.04.f																																							
total/sem.	hours:	56					VPI:					56					VPI:					84					VPI:					140					VPI:					90														
	credits:	4					evaluations: 1D					4					evaluations:1D					6					evaluations:2D					6					evaluations:2D					2														
total/week	hours:	4										4										6										10																								
	of which:	2					2					0					0					(c, s, l, p)					2					2					0					0					E					30				

		YEAR III										YEAR IV																																																																										
		SEMESTER 5					SEMESTER 6					SEMESTER 7					SEMESTER 8																																																																					
1.		Precision mechanics mechanisms Facultative Discipline 1					Micro-electro-mechanisms Facultative Discipline 3																																																																															
		L442.15.05.f01	D	3	28	0	14	0		20	L442.15.06.f01	D	3	28	0	14	0		20																																																																			
2.		CATIA Facultative Discipline 2					Parametric design Facultative Discipline 4																																																																															
		L442.15.05.f02	D	3	14	0	28	0		30	L442.15.06.f02	D	3	14	0	28	0		30																																																																			
3.							Volunteering																																																																															
							L442.15.06.f03																																																																															
total/sem.	hours:	84					VPI:					50					hours:					112					VPI:					50					hours:					0					VPI:					0																																		
	credits:	6					evaluations:2D					2					credits:					8					evaluations: 2D					2					credits:					0					evaluations:																																							
total/week	hours:	6										hours:					8										hours:					0										hours:					0																																							
	of which:	3					0					3					0					(c, s, l, p)					of which:					3					2					3					0					(c, s, l, p)					of which:					0					0					0					0					(c, s, l, p)				

**Legend**

Name of discipline									
Code	nc	FE	c	s	l	p	CF	VPI	

Code = discipline code  
nc = number of credits  
FE = evaluation type  
FE ∈ {E, D, C, P-E, P-D}

E=exam  
D=distributed evaluation  
C= colloquy  
P - E - independent project with exam as if it is a discipline with exam  
P - D - independent project with exam as if it is a discipline with distributed evaluation  
c=number of hours course/semester

s=number of hours seminary  
l=number of hours laboratory  
p=number of hours project  
CF= formative category to which the discipline belongs  
CF ∈ {DC, DD, DF, DS}  
DC - complementary discipline  
DD - discipline within the domain  
DF - fundamental discipline  
DS - speciality discipline  
VPI = number of hours necessary for individual study

**Sample**

Mathematical analysis									
Code	4	E	28	28	0	0	DF	60	

(\*) - optional disciplines activated in the academic year 2015 / 2016

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