

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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 Domain of ranking (DR): Mechatronics and Robotics
 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 instalations																				
																			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 machins 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	L440.15.01.f01 D 4 28 28 0 0 DC 10					Pedagogics I-F.I_2					Computer aided graphics-F.II_1					ANSYS-F.II.4							
2.												Matlab-F.II.2 Pedagogics II-F.II.3					MS Office-F.II.5							
												L440.15.03.f D 3 14 0 28 0 DC 30					L440.15.04.f D 3 0 0 42 0 DC 30							
3.																	Social responsibility and civic activity							
																	L440.15.04.f E 2 28 28 0 0 E 30							
total/sem.	hours: 56	VPI: 10					hours: 56	VPI: 10					hours: 84	VPI: 60					hours: 140	VPI: 90				
	credits: 4	evaluations: 1D			1		credits: 4	evaluations: 1D			1		credits: 6	evaluations: 2D			2		credits: 6	evaluations: 2D			2	
total/week	hours: 4						hours: 4						hours: 6						hours: 10					
	of which:	2 2 0 0			(c, s, l, p)		of which:	2 2 0 0			(c, s, l, p)		of which:	2 0 4 0			(c, s, l, p)		of which:	2 2 6 0			(c, s, l, p)	

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