

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.	Cr.:
20	70	30	#

**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.F	D	4	28	28	0	0	DF	46	L440.15.03.	E	3	28	0	14	0	DD	40	L440.15.04.	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.D	E	5	42	0	28	0	DD	64	L440.15.03.	D	5	28	14	14	0	DF	64	L440.15.04.	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.D	E	5	28	28	0	0	DD	64	L440.15.03.	E	3	28	14	0	0	DD	36	L440.15.04.	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.D	E	5	28	0	35	0	DD	64	L440.15.03.	E	4	28	14	14	0	DD	46	L440.15.04.	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.D	E	5	35	0	28	0	DD	64	L440.15.03.	E	5	28	14	14	0	DD	64	L440.15.04.	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.C	D	2	14	14	0	0	DC	20	L440.15.03.	D	4	28	14	14	0	DD	46	L440.15.04.	E	4	42	0	28	0	DD	50		
7.	International languages					International languages					Programming II					Microeconomy																						
	L440.15.01.C7	D	2	0	28	0	0	DC	20	L440.15.02.C	D	2	0	28	0	0	DC	20	L440.15.03.	D	4	28	0	28	0	DF	46	L440.15.04.	D	3	28	14	0	0	DC	40		
8.	Sports					Sports					Sports					Sports																						
	L440.15.01.C8	D	2	0	14	0	0	DC		L440.15.02.C	D	2	0	14	0	0	DC		L440.15.03.	D	2	0	14	0	0	DC		L440.15.04.	D	2	0	14	0	0	DC			
9.																Practical training 40 hours/sem.																						
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				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)		

RECTOR,  
Prof.univ.dr.Ing.Viorel-Aurel ȘERBAN

DEAN,

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 Domain of ranking (DR): Mechatronics and Robotics  
 Licence Domain (LD): Mechatronics and Robotics  
 Specialization (S): Mechatronics

Cod DFI:	CodRSI:	CodDI:	Cr CodS
20	70	30	10

**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					Optional Embedded Discipline 1																																														
	L441.15.05.D1	E	5	28	0	14	14	DD	70	L441.15.06.D	E	5	28	0	14	14	DD	70	L441.15.07.	E	5	28	0	14	14	DD	68	L441.15.08.S	E	3	28	0	14	0	DS	48																											
2.	Bases of mechatronic systems	Bases of robotics										Independent Optional Discipline 6					Optional Embedded Discipline 2																																														
	L441.15.05.S2	D	4	28	0	14	0	DS	52	L441.15.06.S	E	5	28	0	14	14	DS	70	L441.15.07.	E	4	28	0	14	0	DD	44	L441.15.08.S	E	4	28	0	14	0	DS	36																											
3.	Actuating systems I	Actuating systems II										Independent Optional Discipline 7					Optional Embedded Discipline 3																																														
	L441.15.05.D3	E	5	28	0	14	14	DD	52	L441.15.06.D	E	4	28	0	28	0	DD	48	L441.15.07.	D	4	28	0	28	0	DD	44	L441.15.08.S	E	3	28	0	14	0	DS	36																											
4.	Management	Sensors and sensorial systems										Independent Optional Discipline 8					Optional Embedded Discipline 4																																														
	L441.15.05.D4	D	2	14	14	0	0	DD	26	L441.15.06.D	E	4	28	0	28	0	DD	48	L441.15.07.	E	4	28	0	14	0	DD	44	L441.15.08.S	E	3	14	0	14	0	DS	36																											
5.	Acquisition systems, interfacing and virtual instrumentation	Marketing										Independent Optional Discipline 9					Communication																																														
	L441.15.05.D5	E	4	28	0	28	14	DD	52	L441.15.06.D	D	2	14	14	0	0	DD	24	L441.15.07.	E	5	28	0	14	28	DS	68	L441.15.08.C	D	2	14	14	0	0	DC	22																											
6.	Independent Optional Discipline 1	Independent Optional Discipline 3										Independent Optional Discipline 10					Dissertation elaboration (**)																																														
	L441.15.05.D6-	D	4	28	0	28	0	DD	52	L441.15.06.S	D	4	28	0	28	0	DS	48	L441.15.07.	D	4	28	0	14	0	DD	44	L441.15.08.S	D	5	0	0	0	182		178																											
7.	Independent Optional Discipline 2	Independent Optional Discipline 4										Independent Optional Discipline 11					Graduating exam (***)																																														
	L441.15.05.D7-	E	4	28	0	28	0	DD	52	L441.15.06.S	D	4	28	0	28	0	DS	48	L441.15.07.	D	4	28	0	28	0	DS	44		E	10																																	
8.	Practical training (100 hours)	Practical training (100 hours)																																																													
	L441.15.05.S8	C	3	0	0	0	0	DS		L441.15.06.S	C	3	0	0	0	0	DS																																														
9.																																																															
total/sem.	hours:	364					VPI:					356					hours:	364					VPI:					356																																			
	credits:	30					valuations: 4E,3D,1					8					credits:	30					valuations: 4E,3D,1C					8					credits:	30					valuations: 4E,3D,1C					7					credits:	30					valuations: 5E,2D,1C					6			
total/week	hours:	26										hours:	26										hours:	26										hours:	26																												
	of which:	13					1 9 3 (c, s, l, p)					of which:	13					1 10 2 (c, s, l, p)					of which:	14					0 9 3 (c, s, l, p)					of which:	8					1 4 13 (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.

RECTOR,  
 Prof.univ.dr.ing.Viorel-Aurel ȘERBAN

DEAN,

**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 Networks and peripheral equipments (*)																		
	L441.15.05.D6-	D	4	28	0	28	0	DD	52	L441.15.06.S	D	4	28	0	28	0	DS	48	L441.15.07.D1-01	E	5	28	0	14	14	DD	68	L441.15.08.S1-01	E	3	28	0	14	0	DS
2.	Opt. ind. 1.2 Mechatronic systems dynamics						Opt. ind. 3.2 Photometry					Opt. ind. 5.2 Microcontrollers and microprocessors					Opt. Emb.1.2 Mechatronics in automotives																		
	L441.15.05.D6-	D	4	28	0	28	0	DD	52	L441.15.06.S6-02	D	4	28	0	28	0	DS	48	L441.15.07.D1-02	E	5	28	0	14	14	DD	68	L441.15.08.S1-02	E	3	28	0	14	0	DS
3.	Opt. ind. 2.1 Digital electronics						Opt. ind. 4.1 Programming III – Visual Basic					Opt. ind. 6.1 PLC (*)					Opt. Emb.2.1 Flexible manufacturing systems (*)																		
	L441.15.05.D7-	D	4	28	0	28	0	DD	52	L441.15.06.S7-	D	4	28	0	28	0	DS	48	L441.15.07.D2-01	E	4	28	0	14	0	DD	44	L441.15.08.S2-01	E	4	28	0	14	0	DS
4.	Opt. ind. 2.2 High power electronics						Opt. ind. 4.2 Databases and distributed programming					Opt. ind. 6.2 PLCs and micro-programming					Opt. Emb. 2.2 Service and control automats																		
	L441.15.05.D7-	D	4	28	0	28	0	DD	52	L441.15.06.S7-02	D	4	28	0	28	0	DS	48	L441.15.07.D2-02	E	4	28	0	14	0	DD	44	L441.15.08.S2-02	E	4	28	0	14	0	DS
5.												Opt. ind. 7.1 Driving systems in robotics (*)					Opt. Emb.3.1 Simulation of electromechanical systems (*)																		
																		L441.15.07.D3-01	D	4	28	0	28	0	DD	44	L441.15.08.S3-01	E	3	28	0	14	0	DS	36
6.												Opt. ind. 7.2 Programming of industrial robots					Opt. Emb.3.2 Mechatronics in multimedia equipments																		
																		L441.15.07.D3-02	D	4	28	0	28	0	DD	44	L441.15.08.S3-02	E	3	28	0	14	0	DS	36
7.												Opt. ind. 8.1 Artificial intelligence (*)					Opt. Emb.4.1 Microcontrollers programming (*)																		
																		L441.15.07.D4-01	E	4	28	0	14	0	DD	44	L441.15.08.S4-01	E	3	14	0	14	0	DS	36
8.												Opt. ind. 8.2 Systems based on knowledge					Opt. Emb.4.2 Quality and reliability of mechatronical systems																		
																		L441.15.07.D4-02	E	4	28	0	14	0	DD	44	L441.15.08.S4-02	E	3	14	0	14	0	DS	36
9.												Opt. ind. 9.1 Mechatronic systems design (*)																							
																		L441.15.07.S5-01	E	5	28	0	14	28	DS	68									
10.												Opt. ind. 9.2 Mechatronic systems analysis and synthesis																							
																		L441.15.07.S5-02	E	5	28	0	14	28	DS	68									
11.												Opt. ind. 10.1 Working machines in automated processes (*)																							
																		L441.15.07.D6-01	D	4	28	0	14	0	DD	44									
12.												Opt. ind. 10.2 Integrated Manufacturing																							
																		L441.15.07.D6-02	D	4	28	0	14	0	DD	44									
13.												Opt. ind. 11.1 Analysis of experimental data (*)																							
																		L441.15.07.S7-01	D	4	28	0	28	0	DS	44									
14.												Opt. ind. 11.2 Multirobot applications																							
																		L441.15.07.S7-02	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.

RECTOR,  
Prof.univ.dr.ing.Viorel-Aurel ȘERBAN

DEAN,

**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-F	10	L440.15.02.f0	D	4	28	28	0	0	DC-F	10	L440.15.03.f0	D	3	14	0	28	0	DC-F	30	L440.15.04.f01	D	3	0	0	42	0	DC-F	30
2.											Matlab-F.II.2 Pedagogics II-F.II.3					MS Office-F.II.5																				
											L440.15.03.f0					L440.15.04.f0																				
											D					D																				
											3					3																				
											14					0																				
											28					0																				
											0					DC-F																				
											30					30																				
3.																Social responsibility and civic activity																				
																L440.15.04.f0																				
																E																				
																2																				
																28																				
																28																				
																0																				
																0																				
																DC-F																				
																30																				
total/sem.	hours:	56			VPI:	10				hours:	56			VPI:	10				hours:	84			VPI:	60				hours:	140			VPI:	90			
	credits:	4			evaluations:	1D				credits:	4			evaluations:	1D				credits:	6			evaluations:	2D				credits:	8			evaluations:	2D, 1C			
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					Micro-electro-mechanisms Facultative Discipline 3																														
	L441.15.05.f01	D	3	28	0	14	0		20	L441.15.06.f0	D	3	28	0	14	0		20																		
2.	CATIA Facultative Discipline 2					Parametric design Facultative Discipline 4																														
	L441.15.05.f02	D	3	14	0	28	0		30	L441.15.06.f0	D	3	14	0	28	0		30																		
3.						Volunteering																														
						L441.15.06.f0																														
						C																														
						2																														
						0																														
						0																														
						28																														
						0																														
total/sem.	hours:	84			VPI:	50				hours:	112			VPI:	50				hours:	0			VPI:	0				hours:	0			VPI:	0			
	credits:	6			evaluations:	2D				credits:	8			evaluations:	2D, 1C				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	0	5	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	

**Cod** = 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 2014 / 2015

RECTOR,  
Prof.univ.dr.ing.Viorel-Aurel ȘERBAN

DEAN,