Universitatea Politehnica Timişoara

Facultatea Mechanical Engineering
Domeniul de licenta**:** Mecatronics and robotics
Programul de studii univ. de masterat**: ROBOTIC SYSTEMS WITH ARTIFICIAL INTELLIGENCE**

Forma de invatamant: **cu frecventa**

Durata studiilor: **2 ani**

Domeniul fundamental de ierarhizare **(DFI):** Engineering Science
Ramura de stiinta **(RSI):** Mechanical, mechatronical and robotical engineering
Domeniul de ierarhizare **(DII):** MECATRONICS AND ROBOTICS
Domeniul de studii universitare de masterat **(DSU_M)**: : MECATRONICS AND ROBOTICS

Code DFI.Code RSI.Code DII.Code DSU_M
20.70.30.10

CURRICULUM
Academic year 2014 - 2015
YEAR I

	SEMESTER 1									SEMESTER 2								
1.	Advanced robotic systems									Structural analysis in robotics								
	Code	8	E	28	0	14	14	DCA	131	Code	8	E	28	0	14	14	DCA	131
2.	3D Modelling (ProEng) *									CAD/CAM/CAE systems (CATIA)								
	Code	8	E	14	0	0	28	DA	131	Code	8	E	14	0	14	28	DA	131
3.	Independent optional discipline 1									Independent optional discipline 3								
	Code	7	E	28	0	14	0	DCA	131	Code	7	E	28	0	14	0	DCA	131
4.	Independent optional discipline 2									Independent optional discipline 4								
	Code	7	E	28	0	0	28	DA	131	Code	7	E	28	0	14	0	DCA	131
5.																		
6.	Optional Discipline 1 Optimization algorithme in Mathematica									Optional Discipline 2 Digital Control Systems								
	Code	7	E	28	0	28	0	DC-F	130	Code	7	E	28	0	14	0	DC-F	130
7.																		
8.																		
9.																		
total / semester	hours:	**196**		**VPI:**				**524**		hours:	**196**		**VPI:**				**524**	
	credits:	**30**		evaluări:				5		credits:	**30**		evaluări:				5	
total / week	hours:	**14**		**98**	**0**	**28**	**70**			hours:	**14**		**98**	**0**	**56**	**42**		
	of which:			7	0	2	5	(c, s, l, p)		of which:			7	0	4	3	(c, s, l, p)	

Legenda

Nume disciplina								
Cod	nc	FE	c	s	l	p	CF	VPI

Cod = cod disciplina
nc = nr.credite transferabile
FE = forma de evaluare

FE ∈ {E, D, C, P-E, P-D}

E=examen
D=evaluare distribuita
c=nr.ore curs/semestru
s=nr.ore seminar

l=nr.ore laborator
p=nr.ore proiect
CF=categorie formativa careia ii apartine disciplina

CF∈{DA, DCA, DS}

DA - disciplina de aprofundare
DCA - disciplina de cunoastere avansata
DS- disciplina de sinteza

Exem **VPI** = volum de ore necesar pregatirii individuale pentru un semestru de 14 sapt. plus 4 sapt. de sesiune

Exemplu

Roboti de constructie avansata								
Cod	8	E	28	0	14	14	DCA	130

(*) - discipline optionale activate in anul universitar 2014 / 2015

CURRICULUM
Academic year 2014 - 2015
YEAR II

	SEMESTER 3									SEMESTER 4								
1.	Automation and robotized manucturing lines *									Research activities 7 weeks x 14 hours								
	Code	8	E	28	0	28	0	DS	131	Code		D				98	DS	262
2.	Motion planning of the mobile robots									Elaboration of the master thesis 7 weeks x 14 hours								
	Code	8	E	28	0	14	0	DS	131	Code	30	E				98	DS	262
3.	Independent optional discipline 5																	
	Code	7	E	14	0	14	14	DS	131									
4.	Independent optional discipline 6																	
	Code	7	E	28	0	28	0	DS	131									
5.																		
6.	Optional Discipline 2 Dynamic analysis of the mechatronic systems																	
	Code	7	E	28	0	28	0	DC-F	130									
7.																		
8.																		
9.																		
total / semester	hours:	**196**		VPI:				**524**		hours:	**196**		VPI:				**524**	
	credits:	**30**		evaluări:				5		credits:	**30**		evaluări:				2	
total / week	hours:	**14**		**98**	**0**	**84**	**14**			hours:	**14**							
	of which:			7	0	6	1	(c, s, l, p)		of which:			0	0	0	14	(c, s, l, p)	

INDEPENDENT OPTIONAL DISCIPLINES
YEAR I

	SEMESTER 1									SEMESTER 2								
Ind. Opt. Disc. 1 / 3	Data bases and expert systems									Sensorial integrability								
	Cod	7	E	28	0	14	0	DCA		Cod	7	E	28	0	14	0	DCA	
	Artificial intelligence in robotics									Optical sensors and image analysis								
	Cod	7	E	28	0	14	0	DCA		Cod	7	E	28	0	14	0	DCA	
Ind. Opt. Disc. 2 / 4	Research methods									Calibration of robots and electromechanical mentainance								
	Cod	7	E	14	0	0	28	DA		Cod	7	E	28	0	14	0	DCA	
	Project management									Computer aidedd management of the robotized manufacturing systems								
	Cod	7	E	14	0	0	28	DA		Cod	7	E	28	0	14	0	DCA	
	Advanced mathematics in robotics									Testing the mobile robots								
	Cod	7	E	14	0	0	28	DA		Cod	7	E	28	0	14	0	DCA	
	Statistical techniques in robotics									Neuronal networks								
	Cod	7	E	14	0	0	28	DA		Cod	7	E	28	0	14	0	DCA	

YEAR II

	SEMESTER 3									SEMESTER 4								
Ind. Opt. Disc. 5	Human-Machine interface																	
	Cod	7	E	14	0	14	14	DS										
	Programming of the industrial robots																	
	Cod	7	E	14	0	14	14	DS										
Ind. Opt. Disc. 6	Service robotics																	
	Cod	7	E	28	0	28	0	DS										
	Walking robots																	
	Cod	7	E	28	0	28	0	DS										
	Numerical control of the manufacturing systems																	
	Cod	7	E	28	0	28	0	DS										
	Domestic robots																	
	Cod	7	E	28	0	28	0	DS										

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