

## PLAN DE ÎNVĂȚĂMÂNT

Programul de studii univ. de master:

**AUTOMOTIVE EMBEDDED SOFTWARE (SISTEME ÎNCORPORATE PENTRU DOMENIUL AUTO)**

Tipul de masterat:

de cercetare

Domeniul fundamental (DFI):

**ENGINEERING SCIENCES (ȘTIINȚE INGINEREȘTI)**

Ramura de știința (RSI):

**SYSTEMS ENGINEERING, COMPUTERS AND INFORMATION TECHNOLOGY (INGINERIA SISTEMELOR, CALCULATOARE ȘI TEHNOLOGIA INFORMAȚIEI)**

Domeniul de licență (DL):

**SYSTEMS ENGINEERING (INGINERIA SISTEMELOR)**

Durata studiilor / Numărul de credite:

2 ani / 120 credite

Forma de învățământ:

IF - Invatamant cu frecventa

Domeniul de studii universitare de master (DSU\_M):

**SYSTEMS ENGINEERING (INGINERIA SISTEMELOR)**

**Misiunea programului de studii:**

**Obiectivele programului de studii:**

**Competențele programului de studii:**

**Competențe profesionale:**

1. Problem definition, solution identification and project management of embedded systems.
2. Application of testing and diagnosis models and of quality engineering principles to software applications implemented on embedded systems.
3. Development of hardware and software applications for automotive systems using up-to-date informatics technologies.
4. Innovating solving of core problems in inter-disciplinary co-operation and team-working.

**Competențe transversale:**

- CT1. Carry out principles of ethics, professional values and responsible execution for professional tasks related to research abilities under autonomous decision making based on fair judgment and self-evaluation.
- CT2. Completing activities and executing roles that are intrinsic to team-work on different hierarchical levels, proving leadership and entrepreneurship skills, promoting dialogue, cooperation, positive attitudes, respect to others, promoting diversity, multiculturalism and self-improvement.
- CT3 Correct self-evaluation for continuous professional improvement to enter the work market, adapt to its needs and self-development for efficient use of language and knowledge in information technology and communication.

**Finalități:**

Absolvenții programului de studii universitare de master vor accesa următoarele ocupații posibile conform Clasificării Ocupațiilor din România ISCO-08:

Domeniul de licență: **SYSTEMS ENGINEERING (INGINERIA SISTEMELOR)**  
Programul de studii univ. de master de cercetare: **AUTOMOTIVE EMBEDDED SOFTWARE (SISTEME ÎNCORPORATE PENTRU DOMENIUL AUTO)**

Forma de învățământ: **IF - Învățământ cu frecvență**  
Durata studiilor: **2 ani**

Domeniul fundamental (DFI): **ENGINEERING SCIENCES (ȘTIINȚE INGINEREȘTI)**  
Ramura de știință (RSI): **SYSTEMS ENGINEERING, COMPUTERS AND INFORMATION TECHNOLOGY (INGINERIA SISTEMELOR, CALCULATOARE ȘI TEHNOLOGIA ÎN SISTEMUL DE INGINERIE)**  
Domeniul de studii universitare de master (DSU\_M): **SYSTEMS ENGINEERING (INGINERIA SISTEMELOR)**

Cod DFI	Cod RSI	Cod DSU_M
20	60	20

ciclul	c1c2c3	a1a2
M	024	20

**PLAN DE ÎNVĂȚĂMÂNT**  
**An universitar 2020-2021**  
**ANUL I**

SEMESTRUL 1											SEMESTRUL 2																													
1	Embedded Systems I										Embedded Systems II																													
	M024.20.01.A1	6	E	28	0	14	14		DA	94	M024.20.02.V1	6	E	42	0	28	0		DCAV	80																				
2	Software Project Management										Communications Skills																													
	M024.20.01.S2	5	E	28	0	0	14		DS	83	M024.20.02.S2	4	E	0	28	0	0		DS	72																				
3	Software Engineering I										Embedded Systems Testing																													
	M024.20.01.A3	5	E	28	0	14	0		DA	83	M024.20.02.S3	5	E	21	0	21	0		DS	83																				
4	Networks for Embedded Systems										Dynamic Systems and Stability in Automotive Control																													
	M024.20.01.V4	6	E	28	0	28	0		DCAV	94	M024.20.02.V4	6	E	28	0	14	14		DCAV	94																				
5	Research Activity 1										Academic Ethics and Integrity																													
	M024.20.01.V5	8	D	0	0	0	0	168	DCAV	32	M024.20.02.C5	2	D	14	7	0	0		DC	29																				
6											Research Activity 2																													
											M024.20.02.V6	7	D	0	0	0	0	147	DCAV	28																				
7																																								
8																																								
9																																								
total / sem.	VAi:	196									VPI:	386									VAi:	217									VPI:	386								
	VA (VAi+VAp):	364									VCA (VA+VPI):	750									VA (VAi+VAp):	364									VCA (VA+VPI):	750								
	credite:	30									evaluări:	4E,1D,0C									credite:	30									evaluări:	4E,2D,0C								
total / săpt.	VAi:	14,0									VPI:	27,6									VAi:	15,5									VPI:	27,6								
	VA (VAi+VAp):	26,0									VCA (VA+VPI):	53,6									VA (VAi+VAp):	26,0									VCA (VA+VPI):	53,6								
	din care:	8,0									0,0	4,0	2,0	12,0	(c, s, l, p, VAp)	din care:	7,5									2,5	4,5	1,0	10,5	(c, s, l, p, VAp)										

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ANUL II

SEMESTRUL 3											SEMESTRUL 4										
1	Independent optional course 1 Fault detection and diagnosis // Multi-agent systems										Research/Applied activities										
	M024.20.03.A1-ij	5	E	28	0	21	0		DA	76	M024.20.04.V1	10	D	0	0	0	0	168	DCAV	82	
2	Independent optional course 2 Control of electrical drives // Actuators in automotive systems										Preparation of dissertation thesis										
	M024.20.03.V2-ij	5	E	28	0	21	0		DCAV	76	M024.20.04.V2	10	D	0	0	0	0	196	DCAV	54	
3	Independent optional course 3 Embedded Systems Security // Software Engineering II										Defending dissertation thesis										
	M024.20.03.V3-ij	6	E	28	0	0	21		DCAV	101	M024.20.04.S3	10	E						DS		
4	Independent optional course 4 Java Technologies // Embedded Software Testing																				
	M024.20.03.V4-ij	6	E	28	0	0	21		DCAV	101											
5	Research Activity 3																				
	M024.20.03.V5	8	D	0	0	0	0	168	DCAV	32											
6																					
7																					
8																					
9																					
total / sem.	VAi:	196			VPI:	386			VAi:	0			VPI:	136							
	VA (VAi+VAp):	364			VCA (VA+VPI):	750			VA (VAi+VAp):	364			VCA (VA+VPI):	500							
	credite:	30			evaluări:	4E,1D,0C			credite:	30			evaluări:	1E,2D,0C							
total / săpt.	VAi:	14,0			VPI:	27,6			VAi:	0,0			VPI:	9,7							
	VA (VAi+VAp):	26,0			VCA (VA+VPI):	53,6			VA (VAi+VAp):	26,0			VCA (VA+VPI):	35,7							
	din care:	8,0	0,0	3,0	3,0	12,0	(c, s, l, p, VAp)		din care:	0,0	0,0	0,0	0,0	26,0	(c, s, l, p, VAp)						

RECTOR,  
Conf.univ.dr.ing. Florin DRĂGAN

DECAN,  
Prof.univ.dr.ing. Marius-George MARCU

DISCIPLINE OPTIONALE  
An universitar 2020-2021

ANUL I

	SEMESTRUL 1	SEMESTRUL 2
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		

**DISCIPLINE OPTIONALE**  
**An universitar 2020-2021**

**ANUL II**

		SEMESTRUL 3										SEMESTRUL 4									
01	Independent optional course 1 Fault detection and diagnosis																				
	M024.20.03.A1-01	5	E	28	0	21	0						DA	76							
02	Independent optional course 1 Multi-agent systems																				
	M024.20.03.A1-02	5	E	28	0	21	0						DA	76							
03	Independent optional course 2 Control of electrical drives																				
	M024.20.03.A1-03	5	E	28	0	21	0						DCAV	76							
04	Independent optional course 2 Actuators in automotive systems																				
	M024.20.03.A1-04	5	E	28	0	21	0							76							
05	Independent optional course 3 Embedded Systems Security																				
	M024.20.03.A1-05	6	E	28	0	0	21						DCAV	101							
06	Independent optional course 3 Software Engineering II																				
	M024.20.03.A1-06	6	E	28	0	0	21						DCAV	101							
07	Independent optional course 4 Java Technologies																				
	M024.20.03.A1-07	6	E	28	0	0	21						DCAV	101							
08	Independent optional course 4 Embedded Software Testing																				
	M024.20.03.A1-08	6	E	28	0	0	21						DCAV	101							
09																					
10																					

**Legenda**

Nume disciplina										
Cod	nc	FE	c	s	l	p	VAp	CF	VPI	

**Cod** = cod disciplina  
**nc** = nr.credite transferabile  
**FE** = forma de evaluare  
**FE** ∈ {E, D, C}  
**E**=examen  
**D**=evaluare distribuita  
**C**=colocviu  
**c**=nr.ore curs/semestru  
**s**=nr.ore seminar  
**l**=nr.ore laborator  
**p**=nr.ore proiect  
**VAp**- volum de ore necesar activitatilor partial asistate

Exemplu										
Tehnologii avansate de măsurare										
M170.17.01.V1	8	E	28	0	28	0	49	DCAV	50	

**CF**=categorii formativa careia ii apartine disciplina  
**CF**={DA, DCAV, DS, DC}  
**DA** - disciplina de aprofundare  
**DCAV** - disciplina de cunoastere avansata  
**DS**- disciplina de sinteza  
**DC** - disciplina complementara  
**VPI** = volum de ore necesar pregatirii individuale pentru un semestru de 14 sapt. plus 4 sapt. de sesiune  
**VAl**- volum de ore necesar activitatilor integral asistate=c+s+l+p  
**VA** - volum de ore necesar activitatilor integral asistate si al celor asistate partial =VAi+Vap  
**VCA** - volum de ore cumulal al tuturor activitatilor = VA+VPI

(\*) - discipline optionale activate in anul universitar An universitar 2020-2021

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