

## PLAN DE ÎNVĂȚĂMÂNT

**Programul de studii univ. de master:**

**Tipul de masterat:**

**Domeniul fundamental (DFI):**

**Ramura de stiinta (RSI):**

**Domeniul de licenta (DL):**

**Durata studiilor / Numărul de credite:**

**Forma de învățământ:**

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

CLOUD COMPUTING AND INTERNET OF THINGS/ PROCESARE CLOUD SI INTERNETUL LUCRURILOR

**de cercetare**

**Engineering Science/ Științe Inginerești**

System Engineering, Computer and Information Technology/ Ingineria sistemelor, calculatoare si tehnologia informatiei

**Computer and Information Technology**

**2 ani / 120 credite**

**IF - Invatamant cu frecventa**

**Computer and Information Technology**

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

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

#### **Misiunea programului de studii:**

To provide students with advanced knowledge in the field of cloud computing and internet of things, familiarize them with the evolution of the current techniques, develop research abilities and prepare them for successful careers as key contributors in information technology development and research projects.

#### **Obiectivele programului de studii:**

The main objective of the Master in Cloud Computing and Internet of Things (MCI) programme is to produce highly qualified engineers at master level, with research and development abilities, in the field of Cloud Computing and Internet of Things.

#### **Competențele programului de studii:**

##### **Competențe profesionale:**

- Advanced knowledge of the main topics and problems in the field of cloud computing and IoT;
- Knowledge of the current technologies and abilities to select and apply them in the development of cloud computing and IoT projects;
- Combining knowledge from the area of computer and information technology, with skills to critically analyze and innovate, in order to research, design, optimize, implement and test specific methods and systems;
- Development of techniques, technologies, methods and methodologies specific to computer systems and information technology.

##### **Competențe transversale:**

- Skills of communication, inter-disciplinary co-operation and team project management

#### **Finalități:**

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

- 252901 - specialist SIG/ IT
- 215236 - inginer de cercetare in calculatoare
- 215235 - cercetator in calculatoare

Domeniul de licență:  
Programul de studii univ. de master de cercetare:

Computer and Information Technology  
CLOUD COMPUTING AND INTERNET OF THINGS/ PROCESARE CLOUD SI INTERNETUL LUCRURILOR

Forma de învățământ:  
Durata studiilor:

IF - Învățământ cu frecvență  
2 ani

Domeniul fundamental (DFI):  
Ramura de știință (RSI):  
Domeniul de studii universitare de master (DSU\_M):

Engineering Science/ Științe Inginerești  
System Engineering, Computer and Information Technology/ Ingineria sistemelor, calculatoare și tehnologia informației  
Computer and Information Technology

Cod DFI	Cod RSI	Cod DSU_M
20	60	10

ciclul	c1c2c3	a1a2
M	4	23

**PLAN DE ÎNVĂȚĂMÂNT**  
**Pentru seria de studenți 2023-2025**  
**ANUL I (2023-2024)**

	SEMESTRUL 1										SEMESTRUL 2									
1	Optional Core 1 (choose one from positions 1-5)										Optional Core 3 (choose one from positions 1-5)									
	M4.23.01.*1-ij	7	E	28	0	28	0	0	***	119	M4.23.02.*1-ij	7	E	28	0	28	0	0	***	119
2	Optional Core 2 (choose one from positions 1-5)										Optional Core 4 (choose one from positions 1-5)									
	M4.23.01.*2-ij	7	E	28	0	28	0	0	***	119	M4.23.02.*2-ij	7	E	28	0	28	0	0	***	119
3	Elective 1 (choose one from Master CI/ IT/ ML/ SE)										Elective 2 (choose one from Master CI/ IT/ ML/ SE)									
	M4.23.01.*3	7	E	28	0	28	0	0	***	119	M4.23.02.*3	7	E	28	0	28	0	0	***	119
4	Research Topics in CC and IoT										Introduction to Research									
	M4.23.01.V4	9	D	28	0	0	0	168	DCAV	29	M4.23.02.V4	7	D	28	0	0	0	140	DCAV	7
5											Academic Ethics and Integrity									
											M4.23.02.C5	2	D	14	7	0	0	0	DC	29
6																				
7																				
8																				
9																				
10	disciplina facultativa										disciplina facultativa									
	M4.23.01.10-ij	2	E								M4.23.02.10-ij									
total / sem.	VAi:	196			VPI:			386			VAi:	217			VPI:			393		
	VA (VAi+VAp):	364			VCA (VA+VPI):			750			VA (VAi+VAp):	357			VCA (VA+VPI):			750		
	credite:	30			evaluări:			3E,1D,0C			credite:	30			evaluări:			3E,2D,0C		
total / săptăm.	VAi:	14,0			VPI:			27,6			VAi:	15,5			VPI:			28,1		
	VA (VAi+VAp):	26,0			VCA (VA+VPI):			53,6			VA (VAi+VAp):	25,5			VCA (VA+VPI):			53,6		
	din care:							8,0 0,0 6,0 0,0 12,0 (c, s, l, p, VAp)			din care:				9,0 0,5 6,0 0,0 10,0 (c, s, l, p, VAp)					

Observatii:

## Pentru seria de studenti 2023-2025

ANUL II (2024-2025)

	SEMESTRUL 3										SEMESTRUL 4									
1	Optional Core 5 (choose one from positions 1-5)										Research Activity and Internship									
	M4.23.03.*1-ij	7	E	28	0	28	0	0	***	119	M4.23.04.S1	15	C	0	0	0	0	168	DS	207
2	Optional Core 6 (choose one from positions 1-5)										Master Thesis Development									
	M4.23.03.*2-ij	7	E	28	0	28	0	0	***	119	M4.23.04.S2	15	C	0	0	0	0	196	DS	179
3	Elective 3 (choose one from Master CI/ IT/ ML/ SE)										Examen de disertație/ Master Thesis Defense									
	M4.23.03.*3	7	E	28	0	28	0	0	***	119	M4.23.04.S3	10	E	0	0	0	0	0	DS	
4	Directed Thesis Research																			
	M4.23.03.S4	9	D	0	0	0	28	168	DS	29										
5																				
6																				
7																				
8																				
9																				
10	disciplina facultativa										disciplina facultativa									
	M4.23.03.10-ij	2	E								M4.23.04.10-ij									
total / sem.	VAi:	196	VPI:								VAi:	0	VPI:							
	VA (VAi+VAp):	364	VCA (VA+VPI):								VA (VAi+VAp):	364	VCA (VA+VPI):							
	credite:	30	evaluări:								credite:	30+10*	evaluări:							
total / săptăm.	VAi:	14,0	VPI:								VAi:	0,0	VPI:							
	VA (VAi+VAp):	26,0	VCA (VA+VPI):								VA (VAi+VAp):	26,0	VCA (VA+VPI):							
	din care:		6,0	0,0	6,0	2,0	12,0	(c, s, l, p, VAp)			din care:		0,0	0,0	0,0	0,0	26,0	(c, s, l, p, VAp)		

\* Credite suplimentare alocate Examenului de disertație

Observatii:

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**DISCIPLINE OPTIONALE**  
**Pentru seria de studenti 2023-2025**

**ANUL I (2023-2024)**

	SEMESTRUL 1										SEMESTRUL 2									
01	Optional Core 1-2 IoT and Cloud Architectures and Communication Technologies										Optional Core 3-4 Mobile Cloud Computing and Applications									
	M4.23.01.*1-01	7	E	28	0	28	0	0	DCAV	119	M4.23.02.*1-01	7	E	28	0	28	0	0	DA	119
02	Optional Core 1-2 Communication Technologies in IoT and Cloud										Optional Core 3-4 Advanced Embedded Systems									
	M4.23.01.*1-02	7	E	28	0	28	0	0	DCAV	119	M4.23.02.*1-02	7	E	28	0	28	0	0	DA	119
03	Optional Core 1-2 Smart Sensors and Sensor Networks										Optional Core 3-4 Big Data in Cloud and IoT									
	M4.23.01.*1-03	7	E	28	0	28	0	0	DA	119	M4.23.02.*1-03	7	E	28	0	28	0	0	DCAV	119
04	Optional Core 1-2 Hardware Acceleration Techniques for Cloud Computing										Optional Core 3-4 Cloud Based AI Services									
	M4.23.01.*1-04	7	E	28	0	28	0	0	DCAV	119	M4.23.02.*1-04	7	E	28	0	28	0	0	DCAV	119
05	Optional Core 1-2 Cyber Physical Systems										Optional Core 3-4 Fault-Tolerance of IoT and Dependable Cloud Computing									
	M4.23.01.*1-05	7	E	28	0	28	0	0	DCAV	119	M4.23.02.*1-05	7	E	28	0	28	0	0	DA	119
06	Optional Core 1-2 Data Transmission, Coding and Compression										Optional Core 3-4 DevOps									
	M4.23.01.*1-06	7	E	28	0	28	0	0	DCAV	119	M4.23.02.*1-06	7	E	28	0	28	0	0	DA	119
07	Optional Core 1-2 Cloud Foundations																			
	M4.23.01.*1-07	7	E	28	0	28	0	0	DCAV	119										
08																				
09																				
10																				

**Observatii: (\*) - discipline optionale activate in anul univ. 2020-2021**

**DISCIPLINE OPTIONALE**  
**Pentru seria de studenti 2023-2025**

**ANUL II (2024-2025)**

	SEMESTRUL 3										SEMESTRUL 4									
01	Optional Core 5-6 Security and Privacy in IoT and Cloud																			
	M4.23.03.*1-01	7	E	28	0	28	0	0	DCAV	119										
02	Optional Core 5-6 Advanced DSP Systems																			
	M4.23.03.*1-02	7	E	28	0	28	0	0	DA	119										
03	Optional Core 5-6 Operating Systems for IoT																			
	M4.23.03.*1-03	7	E	28	0	28	0	0	DA	119										
04	Optional Core 5-6 Vehicle to X Communication																			
	M4.23.03.*1-04	7	E	28	0	28	0	0	DA	119										
05	Optional Core 5-6 Development of IoT Products																			
	M4.23.03.*1-05	7	E	28	0	28	0	0	DA	119										
06	Optional Core 5-6 Cloud Technologies in Telecommunications																			
	M4.23.03.*1-06	7	E	28	0	28	0	0	DA	119										
07																				
08																				
09																				
10																				

**Observatii: (\*) - discipline optionale activate în anul univ. 2020-2021**

**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 formative 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 sept. plus 4 sept. de sesiune  
**VAi**- 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 cumulat al tuturor activitatilor = VA+VPI

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**DISCIPLINE FACULTATIVE**  
**Pentru seria de studenti 2023-2025**  
**ANUL I (2023-2024)**

	SEMESTRUL 1	SEMESTRUL 2
01		Volunteering
		M4.23.02.10-012C280000022
02		
03		
04		

Observatii:

**DISCIPLINE FACULTATIVE**  
**Pentru seria de studenti 2023-2025**  
**ANUL II (2024-2025)**

	SEMESTRUL 3	SEMESTRUL 4
01		Volunteering
		M4.23.04.10-012C280000022
02		
03		
04		

Observatii:

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