

Curriculum table for the full-time MSc in Computer Science Engineering
valid from 2023/2024 academic year

Code	Course name	Responsible for subject	weekly hours	credits	Semesters																				Prerequisite Code	
					1.					2.					3.					4.						
					lec	sem	lab	req	cr	lec	sem	lab	req	cr	lec	sem	lab	req	cr	lec	sem	lab	req	cr		
Basic knowledge of nature sciences (20-30)					23	25	7	1	6	ex	5	5	2	2	10	0	0	0	0	0	0	0	0	0	0	
1	NSXPP1EMNF	Programming paradigms and data structures *	Prof. Dr. Szénási Sándor	5	5	3	0	2	ex	5																
2	NKXHT1EMNF	Network technologies	Balázs Dr. Kail Eszter	4	4	2	0	2	ex	4																
3	NKXAB1EMNF	Databases and Big Data technologies	Dr. habil. Fleiner Rita	4	5	2	0	2	m	5																
4	NMXAM1EMNF	Applied Mathematics	Dr. Szöke Magdolna	4	4					3	1	0	ex	4												
5	NBXR1EMNF	System and control theory	Prof. Dr. Kovács Levente	4	5					2	0	2	ex	5												
6	OTTPH1EMNF	Physical education 1.		1	1	0	1	0	t	1																
7	OTTPH2EMNF	Physical education 2.		1	1					0	1	0	t	1												
Economic and human knowledge (10-15)					8	10	2	2	0	5	0	0	0	0	2	2	0	5	0	0	0	0	0	0	0	
8	NKXPV1EMNF	Project management and business development	Dr. Anikó Almási	4	5	2	2	0	m	5																
9	GSXUG1EMNF	Business economics*	Dr. Takácsné Prof. Dr. György Katalin	4	5									2	2	0	m	5								
Professional core material (15-30)					21	23	2	0	3	5	4	0	4	9	2	0	2	5	2	0	2	4	4	4	4	4
10	NKXMO1EMNF	Modern Operational systems	Dr. habil Lovas Róbert	5	5	2	0	3	ex	5																
11	NBXST1EMNF	Safety Technology of Information Systems	Dr. Póser Valéria	4	5					2	0	2	ex	5												
12	NSXIP1EMNF	Image processing and computer graphics	Dr. Vámosy Zoltán	4	5									2	0	2	m	5								
13	NSXPP1EMNF	Parallel programming	Dr. Vámosy Zoltán	4	4													2	0	2	m	4				
14	NKXCB1EMNF	Cloud-based IoT and Big Data Platforms	Dr. habil. Lovas Róbert	4	4					2	0	2	m	4												
Differentiated professional knowledge (50-60)					54	54								4	11	11	11	11	11	11	11	11	11	11	11	9
Cyber-Medical Systems specialization (CMS)					20	24	0	0	0	0	2	0	1	4	5	0	5	12	5	0	2	8	8	8	8	8
15	NBXSZ1EMNF	Sensormodalities *	Prof. Dr. Kozlovsky Miklós	3	4					2	0	1	m	4												
16	NBXCO1EMNF	Diagnostic medical imaging	Prof. Dr. Kozlovsky Miklós	4	4									2	0	2	ex	4								
17	NBXSH1EMNF	Security of health IT systems	Dr. Póser Valéria	3	4									2	0	1	m	4								
18	NBxEB1EMNF	Basics of evidence based medicine	Dr. habil. Ferenci Tamás	3	4									1	0	2	ex	4								
19	NBXAB1EMNF	Application of biostatistical methods	Prof. Dr. Kovács Levente	4	4													2	0	2	ex	4				
20	NBXRO1EMNF	Robotics and data science in medicine	Prof. Dr. Haidegger Tamás	3	4													3	0	0	ex	4				
Robotics specialization (ROB)					21	24	0	0	0	0	3	0	0	0	4	6	0	5	0	12	5	0	2	0	8	8
21	NMXMI1EMNF	Machine intelligence*	Prof. Dr. Takács Márta	3	4					3	0	0	ex	4												
22	NBXPR1EMNF	Programming of robot systems	Dr. Galambos Péter	4	4									2	0	2	ex	4								
23	NBXKD1EMNF	Kinematics and Dynamics of Industrial Robots	Dr. Galambos Péter	4	4									2	0	2	ex	4								
24	NBXRO1EMNF	Robotics and data science in medicine	Dr. Haidegger Tamás	3	4													3	0	0	ex	4				
25	NMXCT1EMNF	Control theory in robotics	Prof. Dr. Tar József	4	4													2	0	2	m	4				
26	NKXHA1EMNF	High Availability Embedded Systems	Prof. Dr. Molnár András	3	4									2	0	1	p	4								
SOC analyser specialization (SOC)					21	24	0	0	0	0	1	0	1	4	6	0	5	12	4	0	4	8	8	8	8	8
27	NBXIC1EMNF	Introduction to cyber security - security awareness*	Dr. Póser Valéria	2	4					1	0	1	m	4												
28	NKXAT1EMNF	Advanced network technologies and their security	Balázs Dr. Kail Eszter	4	4									2	0	2	ex	4								2 NKXHT1EMNF
29	NBXIT1EMNF	IT compliance, audit and risk analysis	Dr. Póser Valéria	3	4									2	0	1	m	4								
30	NBXOS1EMNF	Open source SOC development in practice I.	Vörösné Dr. Bánáti-Baumann Anna	4	4									2	0	2	m	4								
31	NBXOS2EMNF	Open source SOC development in practice II.	Vörösné Dr. Bánáti-Baumann Anna	4	4													2	0	2	ex	4			30 NBXOS1EMNF	
32	NKXMK1EMNF	AI-based solutions for cyber defence	Balázs Dr. Kail Eszter	4	4													2	0	2	ex	4				
Thesis					0	30	0	0	0	0	0	0	0	8	0	0	0	10	0	0	0	12	12	12	12	12
33	NDDDM1EMNF	Thesis work I.	Prof. Dr. Kovács Levente		8																					
34	NDDDM2EMNF	Thesis work II.	Prof. Dr. Kovács Levente		10																					33 NDDDM1EMNF
35	NDDDM3EMNF	Thesis work III.	Prof. Dr. Kovács Levente		12																					34 NDDDM2EMNF
Criteria subject					1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	NDIPT1EMNF	Mentoring	Sájevicsné Dr. habil. Sági Johanna	1	0	0	1	0	s	0																
Optional subjects					8	8				4				0				0								4
37	NKVCC1EMNF	Cloud computing systems	Dr. habil. Lovas Róbert	4	4	2	0	2	ex	4																
38	NBVDQ1EMNF	Digital Quantitative microscopy	Prof. Dr. Kozlovsky Miklós	2	4	2	0	0	m	4																
39	NBVPD1EMNF	Product Development of Medical Equipment	Prof. Dr. Kovács Levente	2	4	2	0	0	m	4																
40	NBVRA1EMNF	Recent Advances in Intelligent Systems	Prof. Dr. Kovács Levente	4	4													4	0	0	ex	4				

Number of requirements: (without specialiation):										5				4														
Exam (ex)										3				3														
Mid-term mark (m)										2				1														
Without specialization:										61	96	11	4	9	29	9	2	6	27	4	2	2	20	2	0	2	20	96
with CMS specialization										81	120	11	4	9	29	11	2	7	31	9	2	7	32	7	0	4	28	120
with ROB specialization										82	120	11	4	9	29	12	2	6	31	10	2	7	32	7	0	4	28	120
with SOC specialization										82	120	11	4	9	29	10	2	7	31	10	2	7	32	6	0	6	28	120

Subjects of the final examination: the subject of the chosen specialisation
The specialisations start alternately every year.