

# Specialization "Cognitive Computing" 2023-2024

## MSc curriculum in general:

year 1	EC	year 2	EC	
Compulsory courses	21	Free electives	15	* core choice: chose 3 out of 6 specialization courses
Specialization courses	18	Internship MKI83	15	* specialization electives: chose 18 ec of the published list
Specialization electives	18	Research project MKI92	30	or: Extended research project MKI94 45
Free electives	3			

**Compulsory: 21 EC (both specialisations) + 18 EC (specialization courses) = 39 EC**

period 1	EC	period 2	EC	period 3	EC	period 4	EC	
<b>Choice ML courses:</b> Statistical Machine Learning NWI-IMC056 (SEM1)/Machine Learning in Practice NWI-IMC030 (SEM2)/Applied Machine Learning MKI75 (SEM2)/Probabilistic Deep Learning MKI69 (SEM2)								
Advanced A&PS MKI66	Ahmadi	3	Advanced A&PS MKI66	Ahmadi	3	AI Research Colloquium MKI71	Sshavari	3
Ethics for AI MKI67	Mecacci	3	Ethics for AI MKI67	Mecacci	3			

## Specialisation Core (18EC)

Neuromorphic Comp. MKI96	Kwisthout	3	Neuromorphic Comp. MKI96	Kwisthout	3	Cognition & Complexity MKI40	Donselaar	3	Cognition & Complexity MKI40	Donselaar	3
Complex Adaptive Systems MKI49	Gerven	3	Complex Adaptive Systems MKI49	Gerven	3	Neurophilosophy DGCN03	Haselager	3	Neurophilosophy DGCN03	Haselager	3
Cognitive Robotics MKI68	Thill	3	Cognitive Robotics MKI68	Thill	3						

## Cognitive Computing Specialization electives: 18 EC

period 1	EC	period 2	EC	period 3	EC	period 4	EC				
Neuroimaging I DGCN02	Kohn	3	Neuroimaging I DGCN02	Kohn	3	AI for Neurotechnology MKI73	Güçlütürk	3	AI for Neurotechnology MKI73	Güçlütürk	3
Bayesian Networks IMC012	Textor	3	Bayesian Networks IMC012	Textor	3	Com. Graph.&Com.Vis. MKI95	Guclu	3	Com. Graph.&Com.Vis. MKI95	Guclu	3
Hands-on Neuroscience NM099b	Norris	3	Hands-on Neuroscience NM099b	Norris	3	New media lab MKI52	Bosse	3	New media lab MKI52	Bosse	3
Text&Multimedia Mining LCEX-06	Larson	3	Text&Multimedia Mining LCEX-06	Larson	3	Adv.Comput.Neurosc.NM085C	Tiesinga	3	Adv.Comput.Neurosc.NM085C	Tiesinga	3
Evolution&the Mind FFIL202A	Lemmens	3	Comput. Neurosc. NM047D	Tiesinga	3	Adv.Machine Learning NM048B	Kappen	3	Adv.Machine Learning NM048B	Kappen	3
Motor Control DGCN23	Medendorp	3	Motor Control DGCN23	Medendorp	3	Natural computing IMC042	Machiori	3	Natural computing IMC042	Machiori	3
Human-Robot Interact.MKI70	Vastenburger	3	Human-Robot Interact.MKI70	Vastenburger	3	Quantitative Brain NWs NM080b	Tiesinga	3	Quantitative Brain NWs NM080b	Tiesinga	3
AI for Healthcare MKI72	Kwisthout	3	AI for Healthcare MKI72	Kwisthout	3	Intel.syst.med.Imag. IMC037	Ciampi	3	Intel.syst.med.Imag. IMC037	Ciampi	3
Neuromorphic Engineering MKI78	Shahsavari	3	Machine Hearing MKI85	Heijden van	3	Advanced Brain-Computer Interfaci	Tangermann	3	Advanced Brain-Computer Interfaci	Tangermann	3
Complex Networks MKI84	Hinne	3	Perception DGCN44	Koning	3	Perception DGCN44	Koning	3	AI in the professional Workfield MKI	Ahmadi	3
Neural computation MKI86	Keemink	3				MKI79 Sensorimotor Neurotechnology	Miller	3	MKI79 Sensorimotor Neurotechnology	Miller	3

**Free electives: 18 EC**

**Graduation project:** Either Internship (15 EC) plus Research Project (30 EC) **or** Extended Research Project (45 EC)