Curriculum Master Computing Science 2014-2015:

New (compared with 2013-2014):

A new guided choice courses Intelligent Systems is added: Formal Modeling of Communicating Systems
Ubiquitous Computing is rescheduled to Semester Ib (instead of IIa)
Machine Learning is rescheduled to Semester Ib (instead of Ia)
Courses in red: not taught in 2014-2015
Advanced Software Architecture will not be taught in 2014-2015
The Guided choice course Problemsolving with Mathematica (Computational Science and Visualisation) will not be taught anymore

Table 1: Master specialization: **Intelligent Systems**

Year	Semester	Course	Course code	ECTS
1	semester Ia	**Web and Cloud Computing**	**INMWCC-12**	5
1	semester Ia	Pattern Recognition	INMPR-08	5
1	semester Ia	Optional module		5
1	semester Ib	Automated Reasoning	INMAR-08	5
1	semester Ib	**Image Processing**	**INMIP-08**	5
1	semester Ib	Neural Networks	INMNN-08	5
1	semester IIa	**Student colloquium CS**	**INMCOL-08**	5
1	semester IIa	Multi-Agent Systems	KIM.MAS03	5
1	semester IIa	Computer Vision	INMCV-08	5
1	semester IIb	**In-company or Research Internship (CS)**	**INSTAGE15**	15
2	semester Ia	Optional module		5
2	semester Ia	Optional module		5
2	semester Ia	Optional module		5
2	semester Ib	Machine Learning	KIM.ML09	5
2	semester Ib	Optional module		5
2	semester Ib	Optional module		5
2	semester IIa and IIb	**Master Thesis**	**INMAFST-08**	30

Table 2: Master specialization: **Computational Science and Visualisation**

Year	Semester	Course	Course code	ECTS
1	semester Ia	**Web and Cloud Computing**	**INMWCC-12**	5
1	semester Ia	Geometric Algorithms	INMGA-08	5
1	semester Ia	Modelling & Simulation	INMMS-08	5
1	semester Ib	**Image Processing**	**INMIP-08**	5
1	semester Ib	Scientific Visualisation	INMSV-08	5
1	semester Ib	Introduction Computational Science	INMICS-08	5
1	semester IIa	**Student colloquium CS**	**INMCOL-08**	5
1	semester IIa	Advanced Computer Graphics	INMACG-08	5
1	semester IIa	Computer Vision	INMCV-08	5
1	semester IIb	**In-company or Research Internship (CS)**	**INSTAGE15**	15
2	semester Ia	Optional module		5
2	semester Ia	Optional module		5
2	semester Ia	Optional module		5
2	semester Ib	Optional module		5
2	semester Ib	Optional module		5
2	semester Ib	Optional module		5
2	semester IIa and IIb	**Master Thesis**	**INMAFST-08**	30

Table 3: Master specialization: **Software Engineering and Distributed Systems**

Year	Semester	Course	Course code	ECTS
1	semester Ia	**Web and Cloud Computing**	**INMWCC-12**	5
1	semester Ia	Software Architecture	INMSA-08	5
1	semester Ia	Software Maintenance & Evolution	INMSME-08	5
1	semester Ib	**Image Processing**	**INMIP-08**	5
1	semester Ib	Software Patterns	INMSP-08	5
1	semester Ib	Ubiquitous Computing	INMUBC-09	5
1	semester IIa	**Student colloquium CS**	**INMCOL-08**	5
1	Semester IIa	Optional module		5
1	semester IIa	Optional module		5
1	semester IIb	**In-company or Research Internship (CS)**	**INSTAGE15**	15
2	semester Ia	Distributed Systems[IEM]	INMDSY-08	5
2	semester Ia	Optional module		5
2	semester Ia	Optional module		5
2	semester Ib	Advanced Software Architecture	INMASA-10	5
2	semester Ib	Optional module		5
2	semester Ib	Optional module		5
2	semester IIa and IIb	**Master Thesis**	**INMAFST-08**	30

Optional modules (total of 30 EC for Master specialization IS and CSV):

15 EC can be chosen freely from any **Master courses** taught at the University.

15 EC are guided choice courses**,** which means that you have to choose three courses from the list of guided choice courses belonging to your Master specialization, see below:

Optional Modules (total of 35 EC for specialization: SEDS):

20 EC can be chosen freely from any Master courses taught at the University.

15 EC are guided choice courses, which means that you have to choose three courses from the list of guided choice courses belonging to your Master specialization, see below:

Table 4: Guided choice courses **Intelligent Systems**

Semester	Course	Course code	ECTS
semester Ia	Formal Modeling of Communicating Systems	WMCS14001	5
semester Ia	Modelling & Simulation	INMMS-08	5
semester Ia	Robotics*	TBROB-12	5
semester Ib	Computational Semantics	LIX021M05	5
semester Ib	Cognitive Modeling: basic principles and methods	KIM.CMB11	5
semester Ib	Scientific Visualisation	INMSV-08	5
semester Ib	Statistical signal processing (MSc)	STMASP-12	5
semester Ib	Robotics**	KIM.ROB03	5
semester Ib	Dynamic Logic	INMDL-08	5
semester Ib	Ubiquitous Computing	INMUBC-09	5
semester IIa	Natural Language Processing	LIX001M05	5
semester IIa	Business Intelligence***	TBBI05E	5
semester IIb	Handwriting Recognition	KIM.SCHR03	5

*Robotics (TBROB-12) requires prior physics knowledge

**Robotics (KIM.ROB03) requires prior knowledge: Cognitive Robotics (contact study advisor Artificial Intelligence in advance if you want to take this course)

*** Not allowed if you have passed the Bachelor course Business Intelligence (TBBI05E) already

Tabel 5: Guided choice courses **Computational Science and Visualisation**

Semester	Course	Course code	ECTS
semester Ia	Pattern Recognition	INMPR-08	5
semester Ia	Computational Physics	NACP-11	5
semester Ib	Machine Learning	KIM.ML09	5
semester Ib	Neural Networks	INMNN-08	5
semester Ib	Statistical signal processing (MSc)	STMASP-12	5
semester Ib	Adv. self-organisation of social systems	MLBI0801	5
semester Ib	Cognitive Modeling: basic principles and methods	KIM.CMB11	5
semester IIa	Numerical Mathematics 2	WINM2-08	5
semester IIb	Numerical Mathematics 1	WINM1-07	5

Table 6: Guided choice courses **Software Engineering and Distributed Systems**

Semester	Course	Course code	ECTS
semester Ia	Pattern Recognition	INMPR-08	5
semester Ia	Robotics*	TBROB-12	5
semester Ib	Scientific Visualisation	INMSV-08	5
semester Ib	Machine Learning	KIM.ML09	5
semester IIa	Business Intelligence***	TBBI05E	5
semester IIb	Systems Engineering	TBSE05E	5
semester IIb	Sustainable and Integrated Inf. Systems	EBM630B05	5

*Robotics (TBROB-12) requires prior physics knowledge

*** Not allowed if you have passed the Bachelor course Business Intelligence (TBBI05E) already

N.B.: Please note that after the coming academic year, a few master courses will not be taught each year, but **in alternating years**, see the table below.

Course	***Taught in 2013-2014***	***Taught in 2014-2015***	***Taught in 2015-2016***
Geometric Algorithms	YES	YES	NO
Ubiquitous Computing	YES	NO	YES
Modeling and Simulation	YES	YES	NO
Introd. to Computational Science	YES	NO	YES