

Module MA-INF 4306	Lab Development and Application of Data Mining and Learning Systems				
Workload 270 h	Credit points 9 CP	Duration 1 semester	Frequency every year		
Module coordinator	Prof. Dr. Stefan Wrobel				
Lecturer(s)	Prof. Dr. Stefan Wrobel				
Classification	Programme M. Sc. Computer Science		Mode Optional	Semester 3.	
Technical skills	Students will acquire in-depth knowledge in the construction and development of intelligent learning systems for machine learning and data mining. They learn how to work with existing state-of-the-art systems and apply them to application problems, usually extending them for the requirements of their particular task.				
Soft skills	Communicative skills (appropriate oral presentation and written documentation of project results), social skills (ability to work in teams), self-competences (time management, aiming at long-range goals under limited resources, ability to work under pressure, ability to accept/formulate criticism)				
Contents	Data storage and process models of data analysis. Common open source frameworks for the construction of data analysis systems, specialized statistical packages. Pre-processing tools. Mathematical libraries for numerical computation. Search and optimization methods. User interfaces and visualization for analysis systems. Data analysis algorithms for embedded and distributed systems. Ubiquitous discovery systems.				
Prerequisites	Recommended: At least 1 of the following: MA-INF 4111 – Intelligent Learning and Analysis Systems: Machine Learning MA-INF 4112 – Intelligent Learning and Analysis Systems: Data Mining and Knowledge Discovery				
Format	Teaching format	Group size	h/week	Workload[h]	CP
	Lab	8	4	60 T / 210 S	9
	T = face-to-face teaching; S = independent study				
Exam achievements	Oral presentation, written report (graded)				
Study achievements	none (not graded)				
Forms of media	Computer Software, Documentation, Research Papers.				
Literature	The relevant literature will be announced towards the end of the previous semester.				