Computer Systems						AR-103
Rota		Duration	Semester	sws	Credit Points	Workload
annua	ually WS 1 Semester		1 st (Semester)	4 SWS	6	180 h
1	1 Modul Structure					
	Course (Abbreviation)		Type/ SWS	Presence	Self Study	Credit Points
	a) Computer	Systems (CS)	Lecture/ 3 SWS	35 h	85 h	4
	b) Computer	Systems (CS)	Tutorial/ 1 SWS	15 h	45 h	2
2	Language English					
3	Content					
	 Microprocessors: Processor performance, instruction set, compilers, pipelining, and superscalar architectures torage Technology: SRAM, DRAM, ROM, magnetic recording, optical recording Data Communication: Bus systems, Ethernet, TCP/IP Memory Hierarchy: Caches, virtual memory, RAID systems 					
	 General, Communication within Computer Systems: John L. Hennessy, David A. Patterson, "Computer Architecture, a Quantitative Approach", 3rd Edition, Morgan Kaufmann, 2002 Semiconductor memory: Betty Prince, "High Performance Memories", Wiley, 1999 Optical Storage: Alan Marchant, "Optical Recording", Addison Wesley, 1999 Communication between Computer Systems: Andrew S. Tanenbaum, "Computer Networks", Prentice Hall, 3rd edition 1996, ISBN 0133499456 Larry L. Peterson, Bruce S. Davie, "Computer Networks, A Systems Approach", Morgan Kaufmann, 2nd ed. 1999 					
4	Competencies					
	By attending this course, students learn the architecture and the components of modern computer systems. This knowledge is directly required for advanced courses on distributed systems and communication systems. As computers are vital components of most robots and complex process automation systems, a basic understanding of computer systems is necessary for most practical work in this area, like project groups and lab courses.					
5	Examination Requirements					
	All students are required to successfully complete 2 out of 4 special assignments in order to be admitted to the final exam. The final exam is a written test (3 hours). The grade is solely determined by the final exam.					
6	Formality of Examination					
7	Module Requirements (Prerequisites)					
8	Allocation to Curriculum:					
	Mandatory Course					
	Program: Automation & Robotics					
9	Responsibility/ Lecturer					
	Prof. Dr. Selma Saidi/ Prof. Dr. Selma Saidi					