

Scheduling Problems and Solutions					AR-202
Rota	Duration	Semester	SWS	Credit Points	Workload
bi-annually SS	1 Semester	2nd (Semester)	6 SWS	10	300 h
1	Modul structure				
	Course (Abbreviation)	Type/ SWS	Presence	Self study	Credits
	a) Scheduling Problems and Solutions (SPaS)	Lecture/ 4 SWS	60 h	120 h	6
	b) Scheduling Problems and Solutions (SPaS)	Tutorial/ 2 SWS	30 h	75 h	4
	c) Scheduling Problems and Solutions (SPaS)	P/ 1 SWS	15 h		
2	Language English				
3	Content <ol style="list-style-type: none"> 1. Single Machine Models: Classification, complexity, total weighted completion time, maximum lateness and multiple objectives 2. Parallel Machine Models: Makespan, total completion time, preemption 3. Shop Systems: Flow shop, flexible flow shop, job shop, open shop 4. Online Scheduling: Competitive factors, non clairvoyant scheduling 5. Scheduling in Practice: Computer intelligence, Integer linear programming Literature: <ul style="list-style-type: none"> • M. Pinedo: Scheduling - Theory, Algorithms and Systems, 4th edition, Springer 2012 • Yves Robert, Frédéric Vivien (ed.): Introduction to Scheduling, CRC Press, 2010 				
4	Goals The students know the classification of scheduling problems as well as the application of practical algorithms, heuristics, and methods in order to solve these combinatorial resource allocation tasks. They can evaluate the efficiency of classical solution methods and will be able to develop new solution approaches for complex scheduling problems based on their acquired knowledge.				
5	Examination Requirements Dependent on the number of participants the final exam is takes place as oral (40 min) or written exam (2h). The students must successfully participate in the lab course as preparation for the exam.				
6	Formality of Examination <input checked="" type="checkbox"/> Module Finals <input type="checkbox"/> Accumulated Grade				
7	Module Requirements (Prerequisites)				
8	Allocation to Curriculum: Program: Automation & Robotics, Field of study: Robotics, Cognitive Systems				
9	Responsibility/ Lecturer <i>Prof. Dr. Uwe Schwiegelshohn/Prof. Dr. Uwe Schwiegelshohn</i>				