

Program		Type of studies (cycle)	Third cycle		
		Name of the program	SEE Doctoral Studies in Mathematical Science		
Course					
Course title		Global Optimization			
Course code	Semester	Course status	ECTS credits	Contact hours	
	III		10	30	
Teaching staff	Teacher	Prof. Dr. Franz Kappel			
	Other staff				
Course goals	The course should provide an overview on a wide range of methods for various optimization problems. Special attention is devoted to global optimization problems. The students should learn about the essential theoretical results and equally important, about numerical algorithms for solving optimization problems using methods under consideration. The course will also include some topics which are represented as research topics in this filed.				
Course content/topics					
<ul style="list-style-type: none"> • Branch and bound methods • Cutting plane methods • Interval methods • Simulated annealing • Clustering methods • Genetic algorithms 					
LITERATURE		Grading			
[1] D. E. Goldberg, Genetic Algorithms in Search, Optimization and Machine Learning, Addison-Wesley, New York 1989. [2] E. Hansen, Global Optimization Using Interval Analysis, Pure and Applied Mathematics, Vol. 165, Marcel Dekker, New York 1992. [3] R. Horst and H. Tuy, Global Optimization: Deterministic Approaches, Springer-Verlag, Berlin 1990. [4] A. A. Torn and A. Zilinskas, Global Optimization, Lecture Notes in Computer Science, Vol. 350, Springer-Verlag, Berlin 1989. [5] A. A. Zhigljavsky, Theory of Global Random Search, Mathematics and Its Applications, Vol. 65, Kluwer, Dordrecht 1991.			Criterion	Points	Cut-off points
		1.	Written assignment	20	11
		2.	Project	40	22
		3	Final exam	40	22
		Total			100