

Study programmes: Doctoral studies of the studying program Mathematics - Applied Mathematics				
Course name: 3M530 – Theory of location problems with applications				
Lecturers: Zorica Stanimirović				
Status: Optional				
ECTS: 9				
Attendance prerequisites: None				
Course aims: Acquisition of general, specific, and practical knowledge in location problems.				
Course outcome: At the end of the course, a student will gain theoretical and practical knowledge in location problems. A student will be able to formulate, model, and solve location problems that arise from practice.				
Course content: History of location problems. Classification of location problems and their mathematical models. Theoretical aspects of location problems. Discrete location problems, continuous location problems, location problems on networks. Min-sum and min-max location models. Endogenous and exogenous location models. Extensions of classical location problems and their models. Location problems in public and private sector - examples of application. Exact and heuristic solution approaches to location problems and their software implementation.				
Literature: Drezner Z., Hamacher H., <i>Facility Theory: Applications and Theory</i> , Springer-Verlag, 2002. Farahani, R. Z., Hekmatfar, M. (Eds.). <i>Facility location: concepts, models, algorithms and case studies</i> . Springer Science & Business Media, 2009. Francis R.L., McGinnis L.F., White J.A., <i>Facility Layout and Location: An Analytical Approach</i> , Second Edition, Prentice-Hall International, Englewood Cliffs, NJ, 1992. Love R., Morris J., Wesolowsky G. <i>Facility location – models and methods</i> , North-Holland, New York, 1989.				
Number of hours: 10	Lecures: 4	Excercises: -	Laboratory: -	Research: 6
Teaching and learning methods: Frontal teaching/ Group work/ Practical work				
Assessment (maximal 100 points)				
Course assignments	points	Final exam		points
Seminars	30	Written exam		
Exercises / Tutorials		Oral exam		70
Colloquia				