

Study programmes: PhD studies - Informatics				
Course name: P480 - Constraint programming				
Lecturers: Filip Marić and other teachers from the Computer Science Department				
Status: Elective				
ECTS: 9				
Attendance prerequisites: No preconditions				
Course aims: Introduction to Constraint Satisfaction Problems (CSP) and methods of their solving - methods of Constraint Programming (CP).				
Course outcome: After the course, the student is able to model real, practical problems in a form of constraint solving problems and solve them using domain-specific and general methods of constraint programming. The student can use available systems for modeling and solving constraint systems, but can also implement specific methods.				
Course content:				
<ul style="list-style-type: none"> - Constraint satisfaction problems and a survey of constraint programming - Types of local consistency, constraint propagation - Search base algorithms (backtracking, local search) - Global constraints and their solving - Connections to the SAT problem - Symmetry in constraint satisfaction problems - Modeling and modeling languages (Minizinc, Ilog, B-Prolog) - Examples of real-world applications (scheduling, planning, vehicle routing, ...) 				
Literature:				
1. Krzysztof R. Apt, Constraint Programming, Cambridge, 2003.				
2. Francesca Rossi, Peter van Beek, Toby Walsh, Handbook of Constraint Programming, Elsevier, 2006. (teacher can choose another appropriate literature)				
Number of hours: 10	Lectures: 4	Tutorials: -	Laboratory: -	Research: 6
Teaching and learning methods: Frontal, group and practical				
Assessment (maximal 100 points)				
Course assignments	points	Final exam		points
Lectures	-	Written exam		-
Exercises / Tutorials	-	Oral exam		-
Colloquia	%predispit ne_kolokvi jum%	Written-oral exam		70
Essay / Project	30			