

Study programmes: PhD studies - Informatics				
Course name: R452 - Machine Learning				
Lecturers: Predrag Janičić and other lecturers of the Department of Computer Science				
Status: Elective				
ECTS: 9				
Attendance prerequisites: No prerequisites				
Course aims: Acquiring fundamental knowledge about machine learning and its applications.				
Course outcome: After completion of the course, students understand key theoretical concepts and algorithms of machine learning. They are able to select adequate models and algorithms for solving practical problems.				
Course content: Fundamentals of decision theory Fundamental concepts and results of statistical learning theory Classification and regression: - Linear models - Support vector machines - Artificial neural networks Clustering Dimensionality reduction Graphical models Reinforcement learning				
Literature: 1. Christopher Bishop: Pattern Recognition and Machine Learning, Springer, 2006. 2. Richard Sutton, Andrew Barto: Reinforcement Learning - An Introduction, MIT Press, 1998. (a lecturer can recommend different literature if deemed appropriate)				
Number of hours: 10	Lectures: 4	Tutorials: -	Laboratory: -	Research: 6
Teaching and learning methods: Frontal/Lectures/Exercises				
Assessment (maximal 100 points)				
Course assignments	points	Final exam		points
Lectures	20	Written exam		-
Exercises / Tutorials	-	Oral exam		-
Colloquia	-	Written-oral exam		50
Essay / Project	30			