

Study programme(s): Mathematics (MD)			
Level: doctoral studies			
Course title: Lie Group Applications to Differential Equations (AN-24)			
Lecturer: Sanja Konjik			
Status: elective			
ECTS: 10			
Requirements: none			
Learning objectives:			
Learning outcomes:			
Syllabus:			
<ul style="list-style-type: none"> - Manifolds, vector fields, tensors, differential forms - Lie groups and Lie algebras - Groups of symmetries of differential equations - Groups of symmetries and conservation laws 			
Literature			
<ul style="list-style-type: none"> - Olver, P. J., <i>Applications of Lie Groups to Differential Equations</i>, 2nd edition, Springer-Verlag, NY, 2000 - Warner, F.W., <i>Foundation of Differentiable Manifolds and Lie Groups</i>, Springer-Verlag, NY, 1983 - Lee, J. M., <i>Manifolds and Differential Geometry</i>, American Mathematical Society, Providence, 2009 - Olver, P. J., <i>Equivalence, Invariants and Symmetry</i>, Cambridge University Press, NY, 1995 - Abraham, R., Marsden, J.E., <i>Foundation of Mechanics</i>, Benjamin/Cummings, 1978 			
Weekly teaching load			Other:
			0
Lectures:	Exercises	Other forms of teaching:	Student research:
2		0	6
Teaching methodology			
Lecturing theory with constant student interaction.			
Grading method (maximal number of points 100)			
Pre-exam obligations	points	Final exam	points
Colloquia	60	Oral exam	40