Study programmes: MASTER STUDIES - Mathematics	
Course name: Mechanical practicum	
Lecturers: Svjetlana Terzić	
Status: Optional	
ECTS: 8	
Attendance prerequisites: Introduction to theoretical mechanics, Introduction to dynamic systems theory	
Course aims: Acquisition of theoretical and practical knowledge from various fields of mechanics.	
Course outcome: Upon completion of the course, the student is able to solve theoretically and practically apply various tasks of theoretical mechanics.	
Course content: Oscillation with one degree of freedom. Phase curves. Experimental determination of the gravitational constant. The Foucault pendulum. Experiments. Oscillation of a system with more than one degree of freedom. Computer simulation and analysis of mathematical billiards and three-body problem. Small oscillations of elastic bodies: oscillation of the thread, longitudinal, transverse and torsional oscillations of beam and console and their computer simulation. Basic equations of the linear theory of elasticity. Hooke's law. Lame's equations and the Beltrami-Michell equations. Tension functions. Saint-Venant principle. Saint-Venant problems and their computer simulation.	

Literature:
1. V. Vujičić; Teorija oscilacija, Beograd, 1967.
2. T. Atanacković: Teorija elastičnosti, FTN, Novi Sad.
3. N. Naerlović-Veljković, M. Plavšić: Teorija elastičnosti, Naučna knjiga1988, Beograd.
4. Atanackovic T. M. and Guran A.: Theory of Elasticity for Scientists and Engineers. Birkhauser, Boston, 2000.

Number of hours: 7	**Lectures**: 3	**Tutorials**: 2	**Laboratory**: -	**Research**: 2

Teaching and learning methods: Frontal / Tutorial

Assessment (maximal 100 points)			
Course assignments	**points**	**Final exam**	**points**
Lectures	10	Written exam	30
Exercises / Tutorials	30	Oral exam	30
Colloquia	-	Written-oral exam	-
Essay / Project	-		