Study programmes: MASTER STUDIES - Mathematics	
Course name: Selected Topics of Matrix Analysis	
Lecturers: Danko Jocić	
Status: Optional	
ECTS: 8	
Attendance prerequisites: No prerequisites	
Course aims: Acquiring wider knowledge from theory of matrix analysis.	
Course outcome: The student should learn deeper theoretical foundations of matrix inequalities, including operator integrals and positive definite functions.	
Course content:	

Operator of monotone functions. Operator of convex functions. Matrix inequalities. Perturbation of matrix functions and applications. Positive definite functions and operator integrals and theirs application to inequalities between means of operators.

Literature:
1. R. Bhatia, Matrix Analysis, Graduate Text in Mathematics, Springer 169, 1997.
2. R. Horn, C. Johnson, Matrix analysis, Cambridge University Press, 1986.
3. H.Kosaki, Positive Definiteness of Functions With Applications to Operator Norm Inequalities, Transactiones AMS, 2011.

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

Teaching and learning methods: Frontal / Tutorial

<table>
<tr><th colspan="4">Assessment (maximal 100 points)</th></tr>
<tr><th>Course assignments</th><th>points</th><th>Final exam</th><th>points</th></tr>
<tr><td>Lectures</td><td>30</td><td>Written exam</td><td>35</td></tr>
<tr><td>Exercises / Tutorials</td><td>-</td><td>Oral exam</td><td>35</td></tr>
<tr><td>Colloquia</td><td>-</td><td>Written-oral exam</td><td>-</td></tr>
<tr><td>Essay / Project</td><td>-</td><td></td><td></td></tr>
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