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| <b>Study programmes:</b> PhD studies – Mathematics – Analysis and differential equations  |                    |                    |               |
| <b>Course name:</b> 3M147 Compact and nonselfadjoint operators  |                    |                    |               |
| <b>Lecturers:</b> Danko Jocić   |                    |                    |               |
| <b>Status:</b> Optional   |                    |                    |               |
| <b>ECTS:</b> 9  |                    |                    |               |
| <b>Attendance prerequisites:</b> -  |                    |                    |               |
| <b>Course aims:</b> Mastering of notions and methods of compact and nonselfadjoint operators.   |                    |                    |               |
| <b>Course outcome:</b> Student should understand and be able to apply notions and techniques of compact and nonselfadjoint operators.   |                    |                    |               |
| <b>Course content:</b> Singular values of compact operators. Symmetrically-normed ideals of operators. Regularized determinants and traces. Integral operators. Fredholm's operators. |                    |                    |               |
| <b>Literature:</b>  |                    |                    |               |
| 1. I.C. Gohberg and M.G. Krein, Introduction to the Theory of Linear Non-Self Adjoint Operators, translations AMS 18, 1969.   |                    |                    |               |
| 2. I. Gohberg, C. Goldberg and M.A. Kaashoek, Classes of Linear Operators, Birkhauser, Berlin, 1990.  |                    |                    |               |
| 3. B. Simon, Trace Ideals and their Applications, Cambridge University Press, London, 1979.   |                    |                    |               |
| <b>Number of hours:</b> 10  | <b>Lectures:</b> 4 | <b>Research:</b> 6 |               |
| <b>Teaching and learning methods:</b> Frontal / Individual / Research   |                    |                    |               |
| <b>Assessment (maximal 100 points)</b>  |                    |                    |               |
| <b>Course assignments</b>   | <b>Points</b>      | <b>Final exam</b>  | <b>points</b> |
| Lectures  |                    | Written exam       |               |
| Exercises / Tutorials   | 50                 | Oral exam          | 50            |
| Colloquia   |                    | Written-oral exam  |               |
| Essay / Project   |                    |                    |               |