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| Study programmes: PhD studies – Mathematics-Algebra | | | |
| Course name: Universal Algebra | | | |
| Lecturers: Aleksandar Lipkovski, Milan Božić | | | |
| Status: Optional (compulsory for students in Algebra) | | | |
| ECTS: 9 | | | |
| Attendance prerequisites: None | | | |
| Course aims: Acquisition of general and advanced knowledge of commutative algebra | | | |
| Course outcome: Upon completion of the course, students have extended their knowledge of algebraic structures, free algebras and axiomatic model classes. They understand the following notions: free algebra, variety, ultrafilter, ultraproduct, model. Students know basic and more advanced theorems from these fields as well as main constructions. They are qualified to solve problems from the mentioned areas and follow advanced courses in algebra and other fields of mathematics in which universal algebra plays an important part. | | | |
| Course content: Algebraic structures. First order logic with equality. Algebraic varieties. Categories and functors. Universal objects. Free algebras. Lattices and Boolean algebras. Filters and ideals. Stone's duality. Degree of a Boolean function. Ultraproducts. Structures with relations and models. Axiomatic model classes. Applications. | | | |
| Literature: P.M. Cohn, <i>Universal algebra</i> , D. Reidel Publ. Co. Dodrecht, Netherlands, 1981. Ž. Mijajlović, <i>An Introduction to Model Theory</i> , PMF Novi Sad, 1987. | | | |
| Number of hours: 10 | Lectures: 4 | Tutorials: 6 | |
| Teaching and learning methods: Frontal / Interactive / Tutorials / Lectures / Exercises | | | |
| Assessment (maximal 100 points) | | | |
| Course assignments | Points | Final exam | Points |
| Lectures | - | Written exam | 30 |
| Exercises / Tutorials | - | Oral exam | 30 |
| Colloquia | | | |
| Essay / Project | 40 | | |