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| **UNIVERSITY OF NIŠ** | | | | | | |
| **Course Unit Descriptor** | | **Faculty** | | | **Faculty of Sciences and Mathematics** | |
| **GENERAL INFORMATION** | | | | | | |
| Study program | | | | **Mathematics** | | |
| Study Module (if applicable) | | | |  | | |
| Course title | | | | **History and Philosophy of Mathematics** | | |
| Level of study | | | | Bachelor  Master’s  Doctoral | | |
| Type of course | | | | Obligatory  Elective | | |
| Semester | | | | Autumn Spring | | |
| Year of study | | | | third | | |
| Number of ECTS allocated | | | | 5.00 | | |
| Name of lecturer/lecturers | | | | **Miroslav Ćirić** | | |
| Teaching mode | | | | Lectures Group tutorials  Individual tutorials  Laboratory work  Project work  Seminar  Distance learning  Blended learning  Other | | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | | | | |
| The purpose of this course is to provide insight into the most important moments and centers of development of mathematics, from prehistory to the present day, into the history of development of mathematical concepts and ideas. In addition, the purpose of the course is to provide an introduction to the methodology of deductive sciences and the basic philosophical problems discussed in the context of mathematics. | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| * **Basic periods in the development of mathematics** -Kolmogorov’s periodisation of mathematics. Period of birth of mathematics. Period of elementary mathematics. Period of mathematics of variables. Period of modern mathe-matics. * **Period of birth of mathematics** - beginnings of mathematical thinking, inductive character of early mathematics, mathematics of Mesopotamia – Babylonian mathematics, Egyptian mathematics. * **Period of elementary mathematics** - Greek mathematics, deductive and axiomatic methods, Chinese mathematics, Indian mathematics, Mathematics of medieval Islam. * **Period of mathematics of variables** - Medieval European mathematics - the revival of European mathematics, Euro-pean mathematics of 17th and 18th century, the birth of mathematical analysis - differential and integral calculus. * **Period of modern mathematics** - the birth of modern geometry - non-Euclidean geometries, the birth of modern algebra, development of mathematical analysis. * **Scientific theories** -the characteristics of scientific knowledge, self-correctivity, scientific language, mathematical symbolism, mathematical language. * **Deductive theories** - building of deductive theories, meaning of terms, formalized theories, partial and complete formalization. * **Philosophy of Mathematics** - Platonism and Kant’s conceptualism, problem of foundations of mathematics, logicism, Brouwer’s intuitionism – constructivism, Hilbert’s formalism, finitism and ideal elements, Gödel's incomepleteness theorems, philosophical interpretations. | | | | | | |
| **LANGUAGE OF INSTRUCTION** | | | | | | |
| Serbian (complete course)  English (complete course)  Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)  Serbian with English mentoring Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | |
| **ASSESSMENT METHODS AND CRITERIA** | | | | | | |
| **Pre exam duties** | **Points** | | **Final exam** | | | **Points** |
| **Activity during lectures** | **10** | | **Written examination** | | | **–** |
| **Practical teaching** | **–** | | **Oral examination** | | | **60** |
| **Teaching colloquia** | **30** | | **OVERALL SUM** | | | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | |