Study programme(s): Mathematics (M3) (M4)

Level: bachelor

Course title: A History of Mathematics (M3-16, M4-19)

Lecturer: Đura Ž. Paunić

Status: obligatory

ECTS: 5

Requirements: none

Learning objectives

Introduce students to the history and development of mathematics from ancient times to the beginning of the twentieth century, with special emphasis on mathematical results and theories that are taught in high school and at the faculty (on undergraduate studies).

Learning outcomes:

Minimum: Understanding the historical development of mathematics and the development of basic mathematical results. Understanding the role of mathematics in Mesopotamia, Ancient Greece, India, China and the Arab world of the formation of mathematics in Renaissance Europe. Understanding the emergence of modern mathematics as abstraction processes and interactions of mathematics, science and social processes.

Desired: Students should be able to understand the effects of previous mathematical research on the emergence of modern mathematical terms used in secondary and higher education. Students will learn about life and work of famous mathematicians.

Syllabus

Formation and periodization mathematics. Mathematics in Egypt and Mesopotamia. Development of Greek and Hellenistic mathematics. Mathematics in China from the third to the fifteenth century, mathematics in India in the Middle Ages and mathematics in the Arab world from the eighth to the fifteenth century. Byzantine and Western medieval mathematics. Mathematical renaissance of the fifteenth and sixteenth century. The Beginnings of Algebra, Analytic Geometry and Calculus. Mathematics in the eighteenth century. The emergence and development of mathematical disciplines in the nineteenth century. The emergence of abstract mathematics in the early twentieth century.

Literature

1. D. J. Strojk, *A brief overview of the history of mathematics*, Belgrade, Zavod za udžbenike i nastavna sredstva, 1991.
2. E. T. Bell, *Great mathematicians*, Zagreb, Nakladni Zavod Znanje, 1972.
3. V. Katz, *A History of Mathematics*, Reading Ma, 3rd Ed. Addison-Wesley, 2009.
4. C. B. Boyer, U. C. Merzbach, *A History of Mathematics*, New York, 3rd Ed., John Wiley & Sons, 2011.
5. M. Kline, *Mathematical Thought from Ancient to Modern Times*, New York, Oxford

Weekly teaching load				Other: 0
Lectures: 3	Exercise: 1	Other forms of teaching: 0	Student research: 0	

Teaching methodology

Lectures are presented using classical teaching methods, supported with the projector. Knowledge evaluation is done through colloquia (from ancient mathematics) and a term paper. Final oral exam is aimed at evaluating students' ability to present two broad themes in random order.

Grading (maximum number of points 100)

Pre-exam obligations	points	**Final exam**	points
activities during lectures	**10**	Oral exam	**50**
term paper	**40**		