MP006	**Mathematics Teaching Methods IV**	L	P	S	ECTS
		2	0	1	4

Course objective. Students will be able to apply scientific methods of analogy, induction and deduction, analysis and synthesis, generalization and specialization on topics from elementary mathematics and its application in the teaching process,. They will be able to adjust the mathematical content depending on the level of education.

Prerequisites. Mathematics teaching methods II, Mathematics teaching methods III

Course content.
1. Scientific methods in teaching mathematics. Analysis and synthesis. Analogy. Generalization and specialization. Abstraction and concretization. Induction and deduction.
2. Culture of mathematical tasks.The strategies of problem solving. Open and closed tasks.. Setting up and solving mathematical problems.
3. Didactical approach to gifted students. Mathematical competitions. Reporting from professional teacher journals and journals for high school students. Preparation for writing a professional paper on the selected topic in primary or secondary education.

LEARNING OUTCOMES

No.	LEARNING OUTCOMES
1.	Solve any mathematical problem form textbook for primary and secondary schools.
2.	Create mathematical task appropriate to the age and abilities of students.
3.	Adapt the mathematical content to the students' abilities.
4.	Apply scientific methods of analysis and synthesis, analogy, generalization and specialization, abstraction and concretization on mathematical content as well as in the teaching process.
5.	Write a professional paper.

RELATING THE LEARNING OUTCOMES, ORGANIZATION OF THE EDUCATIONAL PROCESS AND ASSESSMENT OF THE LEARNING OUTCOMES

TEACHING ACTIVITY	ECTS	LEARNING OUTCOME **	STUDENT ACTIVITY*	EVALUATION METHOD	POINTS	
					min	max
Attending lectures	1	1-4	The presence at lectures, discussions, teamwork and independent work on assignments	Attendance lists, tracking activities	0	10
Seminar	1	1-5	Writing seminars	Public presentation	17	30
Written exam (Mid-terms)	1	1-4	Preparing for the written exam	Verification of correct answers (evaluation)	17	30

Final exam	1	1-4	Repeating and revising	Oral exam	16	30
TOTAL	4				50	100

Teaching methods and knowledge assessment. Lectures and seminars are obligatory. Seminars will be thematically related to the assessment in mathematics education. Seminar paper will be presented and assessed. The examination consists of the written exam (mid-terms) and oral exam. The oral exam is final part of the examination process.

Can a subject taught in English: Yes

Basic literature:
1. Z. Kurnik, Znanstveni okviri nastave matematike, Element, 2009.
2. M.Pavleković, Metodika nastave matematike s informatikom I, Element, Zagreb, 2001.
3. M.Pavleković, Metodika nastave matematike s informatikom II, Element, Zagreb, 1999.
4. Lj. Jukić Matić, I. Matić, Priručnik za nastavu matematike, Odjel za matematiku,Osijek, 2017.
5. P. Sullivan, P. Lilburn, Open-ended math activities, Oxford University Press, Australia, 2017.

Recommended literature:
1. Journals for school teachers
2. Mathematics textbooks for primary and secondary school