COURSE NAME	Methods of Teaching Mathematics II						
Code	PMM306	Year of study		1.			
Course teacher	Nikola Koceić Bilan	Credits (ECTS)		6			
Associate teachers		Type of instruction (number of lessons)		L	S	E	
				30	30	30	
Course status	Compulsory	E-learning application		15%			

COURSE DESCRIPTION	
Course objectives	Students will: - learn to prepare, organize, and perform math classes at a competent level - learn to evaluate mathematical classes as well as students' and teachers' work - learn to apply various teaching methods (traditional and modern) and different strategies in mathematical education at the high school level -learn to apply various scientific methods (analogy, generalization and specialization, analysis and synthesis, induction and deduction) on topics from elementary mathematics and its application on the educational process - learn to adjust compulsory mathematical contents depending on the educational level.
Course enrolment requirements and entry competences required for the course	Course enrolment: Course taken: Methods of Teaching Mathematics I Entry competences: Students should be familiar with all elementary mathematics concepts.
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	Upon successful completion of this course students will be able to: - prepare and organize math classes by implementing principles of teaching mathematics - evaluate mathematics classes, students' and teachers' work and to do self-evaluation - analyse the results of an examination in order to improve the educational process - give math classes in high schools - apply scientific methods of generalization and specialization to mathematical contests, especially in math classes - apply scientific methods of induction and deduction to the mathematical contests and math classes - apply scientific methods of analysis and synthesis to mathematical contests and math classes -recognize analogous objects, properties and techniques - apply scientific method of analogy to math classes.
Course content details by weekly class schedule (syllabus)	**Lectures/Seminars/Exercises** 1. Evaluating mathematics classes, students' and teachers' work (diagnostic, formative and summative self-evaluation). (1+14+14) 2. Applying computers in math classes. (1+10+10) 3. Scientific method of analogy in mathematical education; analogous objects, properties and techniques; motivation in introducing a new mathematical topic. (10+2+2) 4. Scientific methods of generalization and specialization in mathematical contests and math classes. (6+1+1) 5. Scientific methods of induction and deduction in mathematical contests and math classes. (8+1+1) 6. Scientific methods of analysis and synthesis in mathematical contests and math classes. (4+2+2)
Format of instruction	Lectures, seminars and workshops, exercises, mentorship
Student	Attending classes. Students are expected to be present at least 85% of classes.

responsibilities	Writing and presenting homework and seminar assignments. Attending classes taught by their mentors (teachers/professors) in elementary schools
Screening student work *(name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)*	Attending classes 3 Attending mentor's classes 0,5 Homework and Seminar assignment 0,5 Colloquium (or written exam) 1 Oral exam or final exam assignment 1
Grading and evaluating student work in class and at the final exam	Attending lectures, writing homework, writing a seminar assignment, written and oral exam During the semester, students have the possibility to partially take the written exam –colloquium (one during the semester). Students who pass the colloquium are exempted from taking the written exam. A passed written exam along with all other students' obligations are required in order to take part in the oral exam. Instead of the oral exam, students can take the final exam. Correctly solved assignment, in written and oral form, leads to the successful completion of the course. The final grade is derived from the scores of all course elements (homework and seminar assignments, colloquium or written exam, oral exam or final exam, overall participation in classes during the semester).
Required literature (available in the library and via other media)	1) N. Koceić Bilam, *Nastavni materijal iz Metodike nastave matematike* 2.) Z. Kurnik, *Znanstveni okvir nastave matematike*, Element, Zagreb, 2009. 3.)B. Pavković, D. Veljan, *Elementarna matematika 1.*, Tehnička knjga, Zagreb, 1991 4.) B. Pavković, D. Veljan, *Elementarna matematika 2.*, školska knjga, Zagreb, 1995 5.) M. Pavleković, *Metodika nastave matematike s informatikom*, 1.dio, Element, Zagreb, 1998. 6.) Z. Kurnik, *Posebne metode rješavanja matematičkih problema*, Element, Zagreb, 2009.
Optional literature	1) G. Polya, *Mathematics and Plausible Reasoning*, Princeton Univ. Press, Princeton, 1954 2) G. Polya, *Mathematical Discovery,* John Wiley & Sons, New York-London, I 1962., II 1965. 3) M. Serra, *Discovering Geometry: An inductive Approach*, Key Curriculum Press, 2001. 4) B. Dougherty, *Research in Mathematics Education*, Information Age Publ. Inc., 2002. 5) J. A. Van De Walle, *Elementary and Middle School Mathematics*, Allyn et Bacon, 1999.

	6) D. J. Brahier, *Teaching Secondary and Middle School Mathematics*, Allyn et Bacon, 1999.
Quality assurance methods that ensure the acquisition of exit competences	Summarizing test results and conducting an anonymous student survey at the end of the course. The survey is conducted according to the rules of the University of Split.
Other (suggestions)	