

MP004	Mathematics Teaching Methods III	L	P	S	ECTS 4
		2	0	1	

Course objective. The course objective is to familiarize students with the didactical approach the concept of function in primary and secondary mathematics education. Students will learn how to successfully assess the teaching of mathematics, the work of students and teachers.

Prerequisites. Mathematics teaching methods I, Mathematics teaching methods II

Course content.

1. Didactics of teaching functions. The definition of functions. Historical development. Historical and genetical-principle of function. The basic idea of functions (i.e. Grundvorstellungen). Modelling with functions. Basic functions. Basic components of mathematical analysis.
2. Assessment in mathematics education. The role and the types of assessment in (mathematics) education. Categories and indicators of achievement. Monitoring and observation of the development of mathematical processes in students. Keeping records. Category observations. Assessing productive disposition towards mathematics. The pupils' self-evaluation. Methods of diagnostic evaluation. Construction of mathematical tasks in the context of learning outcomes and taxonomy of cognitive processes. Formative and summative assessment. Evaluation and reporting. Feedback to pupils and their parents.

LEARNING OUTCOMES

No.	LEARNING OUTCOMES
1.	Design a didactical approach for concept related to functions depending on the level of education.
2.	Identify the basic functions in the real world.
3.	Model with functions.
4.	Develop rubrics for evaluating student achievement.
5.	Construct a task for the appropriate learning outcomes.

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	1-5	The presence at lectures, discussions, teamwork and independent work on assignments	Attendance lists, tracking activities	0	10
Seminar	1	4.5	Writing seminars	Public presentation	17	30

Written exam (Mid-terms)	1	1-5	Preparing for the written exam	Verification of correct answers (evaluation)	17	30
Final exam	1	1-5	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. 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. H. J.Vollrath, H.G. Weigand, Algebra in der Sekundarstufe, Spektrum-Verlag, Heidelberg, 2007

Recommended literature:

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