Study program	Level of studies	Third cycle
	Title of the study program	Science and mathematics education

COURSE

Course title	**Selected chapters of algebra**

Course ID	Semester	Course status	ECTS credits	Contact hours
PMAT 603	I	Elective	7	60

Lecturers	Lecturer in charge	
	Other lecturers	
Course aims	Expanding existing knowledge from ring theory and solving algebraic equations and algebraic equation systems. Deepening understanding of the concept of polynomials, related algebraic equations and its solutions.	

CONTENT

#	Teaching units	Contact hours		
		L	E/S	C
	Polynomials and ideals. Polynomials in multiple independent variables. Arrangements in monoms set and sharing algorithm polynomials. The concept of a Grebner base. The characteristics of Grebner's base and the algorithm for calculating it. Solving system of polynomial equations using Grebner bases. The term resultants. Resultant of two polynomial and multipolinomial resultants. Characteristics and methods of calculation resultants. Solving algebraic equation systems by applying results.	30	30	

LITERATURE

[1] D. Cox, J. Little and D. O'Shea, Ideals, Varieties and Algorithms, Springer, 2007

[2] D. Cox, J. Little and D. O'Shea, Using Algebraic Geometry, Springer, 2005

[3] S Lang, Algebra, Springer, 2002

ASSESSMENT OF LEARNING

	Assessment method	Points	Threshold
1.	Partial exams	25	15
2.	Seminar papers	25	10
3	Final exam	50	30
4.			
	Total	100	55