

**UNDERGRADUATE STUDY PROGRAM MATHEMATICS FOR TEACHING
COMPUTER SCIENCE FACULTY
UGD – STIP, 4 YEARS STUDY PROGRAM (240 ECTS)**

2012 / 2013

I SEMESTER				
Mandatory courses				
CODE	COURSE	ECTS	Classes	Semester workload
2FI100112	Mathematics 1	8	3+2+2	216
2FI110112	Linear Algebra	8	3+2+2	216
2FI110012	Informatics	6	2+2+1	156
	Faculty elective course 1	4	2+1+1	120
	Faculty elective course 2	4	2+1+1	120
Total:		30	12+8+7	828

I SEMESTER				
Faculty elective course 1				
CODE	COURSE	ECTS	Classes	Semester workload
2FI140112	Fundamentals of Computer Programming	4	2+1+1	120
2FI140212	Programming Languages	4	2+1+1	120

I SEMESTER				
Faculty elective course 2				
CODE	COURSE	ECTS	Classes	Semester workload
2FI140312	Selected Chapters of Geometry	4	2+1+1	120
2FI140412	Trigonometry	4	2+1+1	120

II SEMESTER				
Mandatory courses				
CODE	C O U R S E	ECTS	Classes	Semester workload
2FI100112	Mathematics 2	8	3+2+2	216
2ET100412	Physics	6	2+2+1	156
2FI110312	Sets and Logic	6	2+2+1	156
	Faculty elective course 3	4	2+1+1	120
	University elective course	6	2+2+1	156
UGD102712	Sport and Recreation **		0+0+2	30
Total:		30	11+9+8	834

** - Signature is required for enrollment in second year of the study program

II SEMESTER				
Faculty elective course 3				
CODE	C O U R S E	ECTS	Classes	Semester workload
2FI140512	Computer Practice 1 (Mathematica)	4	2+1+1	120
2FI140612	Computer Practice 1 (Mathlab)	4	2+1+1	120

III SEMESTER				
Mandatory courses				
CODE	C O U R S E	ECTS	Classes	Semester workload
2FI110412	Mathematical Analysis	8	3+2+2	216
2FI110512	Algebra	8	3+2+2	216
2FI110612	Analytical geometry	6	2+2+1	156
	Faculty elective course 4	4	2+1+1	120
	Faculty elective course 5	4	2+1+1	120
Total:		30	12+8+7	828

III SEMESTER				
Faculty elective course 4				
CODE	C O U R S E	ECTS	Classes	Semester workload
2FI130412	Discrete Mathematics	4	2+1+1	120
2FI134312	Data Structures and Algorithms	4	2+1+1	120

III SEMESTER				
Faculty elective course 5				
CODE	COURSE	ECTS	Classes	Semester workload
2FI140712	Combinatorics	4	2+1+1	120
2FI140812	Theory of Numbers	4	2+1+1	120

IV SEMESTER				
Mandatory courses				
CODE	COURSE	ECTS	Classes	Semester workload
2FI110712	Differential equations	8	3+2+2	216
2FI101712	Numerical methods	6	2+2+1	156
2FI110812	Geometric transformations	6	2+2+1	156
	Faculty elective course 6	4	2+1+1	120
	University elective course 2	6	2+1+1	156
Total:		30	11+9+6	804

IV SEMESTER				
Faculty elective course 6				
CODE	COURSE	ECTS	Classes	Semester workload
2FI141012	Computer Practice 2 (Mathlab)	4	2+1+1	152
2FI1409012	Computer Practice (C++)	4	2+1+1	152

V SEMESTER				
Mandatory courses				
CODE	COURSE	ECTS	Classes	Semester workload
2FI10912	Probability and Statistics	8	3+2+2	216
2FI111112	Topology	8	3+2+2	216
2FI11212	Complex Functions	6	2+2+1	156
	Faculty elective course 7	4	2+1+1	120
	Faculty elective course 8	4	2+1+1	120
Total:		30	12+8+7	828

V SEMESTER				
Faculty elective course 7				
CODE	COURSE	ECTS	Classes	Semester workload
2FI141112	Theory of Dynamical Systems	4	2+1+1	120
2FI141212	Dynamical Systems and Chaos	4	2+1+1	120

V SEMESTER				
Faculty elective course 8				
CODE	COURSE	ECTS	Classes	Semester workload
2FI141312	Descriptive Geometry	4	2+1+1	120
2FI134412	Computer Graphics and Visualization	4	2+1+1	120

VI SEMESTER				
Mandatory courses				
CODE	COURSE	ECTS	Classes	Semester workload
2FI103712	Financial mathematics	6	2+2+1	156
2FI111412	Mathematical Programming	8	3+2+2	216
	Faculty elective course 9	4	2+1+1	120
	University elective course 3	6	2+2+1	156
2FI111312	Vector Spaces	6	2+2+1	144
Total:		30	11+9+6	804

VI SEMESTER				
Faculty elective course 9				
CODE	COURSE	ECTS	Classes	Semester workload
2FI134212	Information Theory	4	2+1+1	120
2FI141412	History of Mathematics	4	2+1+1	120

VII SEMESTER				
Mandatory courses				
CODE	C O U R S E	ECTS	Classes	Semester workload
4FO107512	Psychology	8	3+2+2	216
4FO107412	Pedagogy	6	2+2+1	156
4FO115212	Methodology in Mathematics I	8	3+2+2	216
	Faculty elective course 10	4	2+1+1	120
	Faculty elective course 11	4	2+1+1	120
	Total:	30	12+8+7	828

VII SEMESTER				
Faculty elective course 10				
CODE	C O U R S E	ECTS	Classes	Semester workload
4FO100412	Didactics	4	2+1+1	120
4FO105612	Pedagogical Communication	4	2+1+1	120

VII SEMESTER				
Faculty elective course 11				
CODE	C O U R S E	ECTS	Classes	Semester workload
4FO102612	Inclusive Education	4	2+1+1	120
4FO107712	Educational System of the Republic of Macedonia	4	2+1+1	120

VIII SEMESTER				
Mandatory courses				
CODE	C O U R S E	ECTS	Classes	Semester workload
4FO107612	Teaching Method in Elementary School	6	2+2+1	156
4FO115312	Methodology in Mathematics II	6	2+2+1	156
	Faculty elective course 12	4	2+1+1	120
	University elective course	6	2+2+1	156
	Pedagogical Internship	*	*	*
	<i>Graduation Thesis</i>	8	0+0+8	192
	Total:	30	8+7+12	780

VIII SEMESTER				
Faculty elective course 12				
CODE	C O U R S E	ECTS	Classes	Semester workload
2FI141512	Using Advanced ICT in Education	4	2+1+1	120
4FO107812	Research Methods in Education	4	2+1+1	120
4FO107312	Planning of Pedagogical Work in School	4	2+1+1	120