1. Course programs with information in accordance with Article 4 of the Rulebook on the mandatory components that study programs from the second cycle of studies should have ("Official Gazette of the Republic of Macedonia", no. 25/2011 and no. 154/2011)

FIRST YEAR

Serial number: 1

Attachment No. 3		**Course program from the second cycle of studies**			
1.	Name of the course	**Methodology of Scientific Research Work**			
2.	Code	23IMI21A010			
3.	Study program	Mathematics and Informatics for Teaching, one year studies			
4.	Organizer of the study program (unit, i.e. institute, department, department)	Mother Teresa University Faculty of Information Sciences, Skopje			
5.	Degree (first, second, third cycle)	Second cycle			
6.	Academic year / semester	First year / first semester	7.	Number of ECTS credits	6
8.	Name of the professor	Associate prof. dr. Shpetim Rexhepi			
9.	Prerequisites for enrolling in the course	None			
10.	**Course objectives (competencies):** Training for constant search for objective truth, especially in the use of research methods, techniques and instruments; Empowering students to critically monitor and interpret research results and their applicability in specific situations; Application of basic research methods, data collection procedures and their statistical processing; Training for the application of the basic methodological rules when writing professional and scientific papers.				
11.	**Course Content:** Modern methodological approaches in the research of social phenomena; Scientific explanation, prediction, understanding; Scientific facts, scientific laws and scientific theories; Contemporary understandings of the development of scientific knowledge; Traditional and new research paradigms Scientific research; Stages, general course of scientific research: Research project/draft; Research problem; Research methods; Data collection techniques and instruments; Population and sample in research; Data processing and analysis; Writing a report on the conducted research; Types of research (quantitative, qualitative; action, empirical, developmental, comparative, longitudinal, transferal, experimental...) Ethics of scientific research work; Application of statistics in research, Basic statistical procedures.				
12.	Learning methods: lectures, seminars, exercises, independent tasks, mentoring.				
13.	Total available time	180 hours			
14.	Allocation of available time	2+1			
15.	Forms of teaching activities	15.1.	Lectures - theoretical teaching .		2 x 15 = 30 hours
		15.2.	Exercises (laboratory, classroom), seminars, teamwork.		1 x 15 = 15 hours
16.	Other forms of activities	16.1.	Project tasks		45 hours
		16.2.	Independent tasks		30 hours

		16.3.	Home study - assignments	60 hours
17.	Method of assessment			
	17.1.	Tests		30 points
	17.2.	Individual work/project (presentation: written and oral)		50 points
	17.3.	Activity and participation		20 points
18.	Assessment criteria (points/grade)		up to 50 points	5 (five) (F)
			from 51 to 60 points	6 (six) (E)
			from 61 to 70 points	7 (seven) (D)
			from 71 to 80 points	8 (eight) (C)
			from 81 to 90 points	9 (nine) (B)
			from 91 to 100 points	10 (ten) (A)
19.	Requirement for signature and passing the final exam		Attendance 80% of the teaching Submitted individual works and Completed duties of exercises	
20.	Language of instruction		Albanian, Macedonian and English language	
21.	A method of monitoring the quality of teaching		Mechanisms of internal evaluation and surveys	

22. Literature

22.1. Required reading

No.	Author	Title	Publisher	Year
1.	Mejovšek, M.	Uvod u metode znanstvenog istraživanja	Jastrebarsko: Naklada Slap	2003
2.	Lazar, J., Feng, J. H., and Hochheiser H.	Research Methods in Human Computer Interaction	John Wiley & Sons Ltd	2010
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	Wilhelm Hasselbring / Simon Giesecke (Hrsg.)	Research Methods in Software Engineering	Trustworthy Software Systems	2006
2.	Matijevic, M., Muzic, V., Jokic, M.	Istrazivati I objavljivati:element i metodoloske pismenosti u pedagogiji	Zagreb: HPKZ	2003
3.				

Serial number: 2

Attachment No. 3		**Course program from the second cycle of studies**			
1.	Name of the course	**Selected Topics of Mathematical Analysis**			
2.	Code	23IMI21A020			
3.	Study program	Mathematics and Informatics for Teaching, one year studies			
4.	Organizer of the study program (unit, i.e. institute, department, department)	Mother Teresa University Faculty of Information Sciences, Skopje			
5.	Degree (first, second, third cycle)	Second cycle			
6.	Academic year / semester	First year / first semester	7.	Number of ECTS credits	6
8.	Name of the professor	Assistant prof. dr. Egzona Iseni Rexhepi			
9.	Prerequisites for enrolling in the course	None			
10.	**Course objectives (competencies):** After passing the exam, the student knows the structure of metric, topological and functional spaces and their mappings. The results of the knowledge represent a natural continuation of the concepts and ideas that the graduate student encountered in analysis, geometry, probability, etc. The student is qualified for scientific-research work in several areas of mathematics and applied sciences (economy, engineering, education...).				
11.	**Course Content:** Real functions (definition and basic terms, inverse function, operations with functions and complex function, boundedness, monotonicity and extrema of a real function, elementary functions), limits and continuity of functions (limit at a point, one-sided limits, continuity of a function, asymptotes) . Derivation of a function from a real variable, geometric and kinematic interpretation of the derivative, derivative of a parametric and implicitly given function, theorems for derivatives, intervals of monotonicity and extremal problems. Indefinite and definite integral. Double integral. L-p spaces (inequalities and convex function), elementary Hilbert spaces (scalar product and linear functionals, orthonormal sets, elementary Banach spaces, Fourier coefficients of L-1 spaces, Riesz theorem. Complex numbers, trigonometric form. Euler's formula. A complex function. Limes and continuity of a function. Derivation. Analytical functions. Cauchy Riemann equations. Harmonic functions. Singular points. Complex integration, Cauchy's theorem, Morera. Maximo modulus principle, Schwartz's lemma, approximation theorem.				
12.	Learning methods: Lectures, books, articles, e-learning, term paper, project, consulting.				
13.	Total available time	180 hours			
14.	Allocation of available time	2+1			
15.	Forms of teaching activities	15.1.	Lectures - theoretical teaching .	2 x 15 = 30 hours	
		15.2.	Exercises (laboratory, classroom), seminars, teamwork.	1 x 15 = 15 hours	
16.	Other forms of activities	16.1.	Project tasks	45 hours	
		16.2.	Independent tasks	30 hours	
		16.3.	Home study - assignments	60 hours	
17.	Method of assessment				
	17.1.	Tests		30 points	
	17.2.	Individual work/project (presentation: written and oral)		50 points	

	17.3.	Activity and participation		20 points
18.	Assessment criteria (points/grade)		up to 50 points	5 (five) (F)
			from 51 to 60 points	6 (six) (E)
			from 61 to 70 points	7 (seven) (D)
			from 71 to 80 points	8 (eight) (C)
			from 81 to 90 points	9 (nine) (B)
			from 91 to 100 points	10 (ten) (A)
19.	Requirement for signature and passing the final exam		Attendance 80% of the teaching Submitted individual works and Completed duties of exercises	
20.	Language of instruction		Albanian, Macedonian and English language	
21.	A method of monitoring the quality of teaching		Mechanisms of internal evaluation and surveys	

22. Literature

22.1. Required reading

No.	Author	Title	Publisher	Year
1.	W. Rudin	Real and complex analysis	McGraw-Hill Book Company	1987
2.	D.L. Cohn	Measure Theory	Birkhauser	1980
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	Н. Ивановски	Реална анализа	Скопје	2003
2.	Л. Стојановска, З. Трифунов	Примена на ИКТ во конечна математика	УКЛО	2009
3.	Schaum's outline	Theory and problems of real variables	McGraw-Hill Book Company	1990

Serial number: 3

Attachment No. 3		**Course program from the second cycle of studies**			
1.	Name of the course	**Theory of Measurement and Integration**			
2.	Code	23IMI21A030			
3.	Study program	Mathematics and Informatics for Teaching, one year studies			
4.	Organizer of the study program (unit, i.e. institute, department, department)	Mother Teresa University Faculty of Information Sciences, Skopje			
5.	Degree (first, second, third cycle)	Second cycle			
6.	Academic year / semester	First year / first semester	7.	Number of ECTS credits	6
8.	Name of the professor	Assistant prof. dr. Egzona Iseni Rexhepi			
9.	Prerequisites for enrolling in the course	None			
10.	**Course objectives (competencies):** After completing the course, the student has in-depth knowledge of the basic concepts of a real function.				
11.	**Course Content:** Sets. Cardinal number. Cantor sets, Euclidean n-space, Metric spaces, some important point set theorems, continuity, uniform convergence, Cauchy sequence. Functions with bounded variation. Length of interval, length of union of intervals without intersection, length of empty set, of closed set. Notion of measure, outer measure of sets, measure of set, outer measure of sets, Lebesgue measure. Measure theorem. Borel measure. Immeasurable sets. Measurable functions. Egorov's theorem. Riemann's integral, Lebesgue's integral for measurable functions, geometric interpretation of Lebesgue's integral, Lebesgue's integral in measurable sets, Lebesgue's integral as lims of a sum, Lebesgue's theorem for uniform convergence, Lebesgue's theorem for dominant convergence. Relation between Riemann's and Lebesgue's integral. Lebesgue integral for unbounded functions. Infinite intervals.				
12.	Learning methods: interactive teaching, practical teaching, laboratory exercises, seminar work.				
13.	Total available time	180 hours			
14.	Allocation of available time	2+1			
15.	Forms of teaching activities	15.1.	Lectures - theoretical teaching .	2 x 15 = 30 hours	
		15.2.	Exercises (laboratory, classroom), seminars, teamwork.	1 x 15 = 15 hours	
16.	Other forms of activities	16.1.	Project tasks	45 hours	
		16.2.	Independent tasks	30 hours	
		16.3.	Home study - assignments	60 hours	
17.	Method of assessment				
	17.1.	Tests		30 points	
	17.2.	Individual work/project (presentation: written and oral)		50 points	
	17.3.	Activity and participation		20 points	
18.	Assessment criteria (points/grade)	up to 50 points		5 (five) (F)	
		from 51 to 60 points		6 (six) (E)	

				from 61 to 70 points	7 (seven) (D)	
				from 71 to 80 points	8 (eight) (C)	
				from 81 to 90 points	9 (nine) (B)	
				from 91 to 100 points	10 (ten) (A)	
19.	Requirement for signature and passing the final exam			Attendance 80% of the teaching Submitted individual works and Completed duties of exercises		
20.	Language of instruction			Albanian, Macedonian and English language		
21.	A method of monitoring the quality of teaching			Mechanisms of internal evaluation and surveys		
22.	Literature					
	22.1.	Required reading				
		No.	Author	Title	Publisher	Year
		1.	Schaum' outline	Theory and problems of real variables	Murray R.Spiegel	1990
		2.	J .Yeh	Real analysis		2009
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	J .Yeh	Real analysis	WSPC	2014
		2.				
		3.				

Serial number: 4

Attachment No. 3		**Course program from the second cycle of studies**			
1.	Name of the course	**Discrete Mathematics and its Application in Programming**			
2.	Code	23IMI21A040			
3.	Study program	Mathematics and Informatics for Teaching, one year studies			
4.	Organizer of the study program (unit, i.e. institute, department, department)	Mother Teresa University Faculty of Information Sciences, Skopje			
5.	Degree (first, second, third cycle)	Second cycle			
6.	Academic year / semester	First year / first semester	7.	Number of ECTS credits	6
8.	Name of the professor	Prof. dr. Samet Qera			
9.	Prerequisites for enrolling in the course	None			
10.	**Course objectives (competencies):** Students get to know the methods of discrete mathematics and structures, solve problems and apply them in solving different problems in programming.				
11.	**Course Content:** Finite sets. Variations, permutations, combinations. Counting subsets of a set – combinations, r-combinations with allowed repetition, Pascal's formula and Binomial theorem. Principle of inclusion and exclusion. Sequences, Mathematical Induction, and Recursion. Explicit Formulas for Sequences, Sequences in Computer Programming. Principles of mathematical induction and its application in correctness of algorithms. Defining recurrent sequences and solving them, structural induction. Latin Squares and Application. Theory of sets. Relations and properties of relations. Functions. Binary operations. Modular Arithmetic. Numerical systems. Amounts. Divisibility.				
12.	Learning methods: interactive teaching, practical teaching, laboratory exercises, seminar work.				
13.	Total available time	180 hours			
14.	Allocation of available time	2+1			
15.	Forms of teaching activities	15.1.	Lectures - theoretical teaching .		2 x 15 = 30 hours
		15.2.	Exercises (laboratory, classroom), seminars, teamwork.		1 x 15 = 15 hours
16.	Other forms of activities	16.1.	Project tasks		45 hours
		16.2.	Independent tasks		30 hours
		16.3.	Home study - assignments		60 hours
17.	Method of assessment				
	17.1.	Tests			70 points
	17.2.	Individual work/project (presentation: written and oral)			20 points
	17.3.	Activity and participation			10 points
18.	Assessment criteria (points/grade)		up to 50 points		5 (five) (F)
			from 51 to 60 points		6 (six) (E)

		from 61 to 70 points	7 (seven) (D)
		from 71 to 80 points	8 (eight) (C)
		from 81 to 90 points	9 (nine) (B)
		from 91 to 100 points	10 (ten) (A)
19.	Requirement for signature and passing the final exam	Attendance 80% of the teaching Submitted individual works and Completed duties of exercises	
20.	Language of instruction	Albanian, Macedonian and English language	
21.	A method of monitoring the quality of teaching	Quizzes, post-unit tests, progress monitoring, internal evaluation and survey of students	

22. Literature

22.1. Required reading

No.	Author	Title	Publisher	Year
1.	S.Lipschucz	Theory and problems of finite mathematics	McGraw-Hill	1996
2.	Kenneth H. Rosen	Discrete Mathematics and its applications, 6th edition.	The Mc Graw-Hill Companies	2007
3.	Susanna S. Epp	Discrete Mathematics with application, 4th edition	Brooks/Cole Cengage Learning	2011

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	Rowan Garnier, John Taylor	Discrete Mathematics for New Technology Second Edition	Op Publishing Ltd	2002
2.	Schaum's Outline	Discrete Mathematic	Mc Graw Hill	2000
3.				

Serial number: 5

Attachment No. 3		**Course program from the second cycle of studies**			
1.	Name of the course	**Application of Advanced ICT Technologies in Education**			
2.	Code	23IMI21B050			
3.	Study program	Mathematics and Informatics for Teaching, one year studies			
4.	Organizer of the study program (unit, i.e. institute, department, department)	Mother Teresa University Faculty of Information Sciences, Skopje			
5.	Degree (first, second, third cycle)	Second cycle			
6.	Academic year / semester	First year / first semester	7.	Number of ECTS credits	6
8.	Name of the professor	Associate prof. dr. Mirlinda Ebibi			
9.	Prerequisites for enrolling in the course	None			
10.	**Course objectives (competencies):** Students should learn to use modern computer technologies in teaching.				
11.	**Course Content:** The course covers the following thematic units: Introductory concepts of e-learning (infrastructure, organization, principles of content development and support) Web portals for e-learning Introduction to mobile learning Application of advanced interactive whiteboards in the learning process Development of teaching content for e-learning Support for disabled people in the e-learning process.				
12.	Learning methods: Lectures, exercises, preparation of a seminar paper, practical teaching				
13.	Total available time	180 hours			
14.	Allocation of available time	2+1			
15.	Forms of teaching activities	15.1.	Lectures - theoretical teaching .	2 x 15 = 30 hours	
		15.2.	Exercises (laboratory, classroom), seminars, teamwork.	1 x 15 = 15 hours	
16.	Other forms of activities	16.1.	Project tasks	45 hours	
		16.2.	Independent tasks	30 hours	
		16.3.	Home study - assignments	60 hours	
17.	Method of assessment				
	17.1.	Tests	30 points		
	17.2.	Individual work/project (presentation: written and oral)	50 points		
	17.3.	Activity and participation	20 points		
18.	Assessment criteria (points/grade)	up to 50 points	5 (five) (F)		
		from 51 to 60 points	6 (six) (E)		
		from 61 to 70 points	7 (seven) (D)		
		from 71 to 80 points	8 (eight) (C)		
		from 81 to 90 points	9 (nine) (B)		
		from 91 to 100 points	10 (ten) (A)		

19.	Requirement for signature and passing the final exam		Attendance 80% of the teaching Submitted individual works and Completed duties of exercises			
20.	Language of instruction		Albanian, Macedonian and English language			
21.	A method of monitoring the quality of teaching		Mechanisms of internal evaluation and surveys			
22.	Literature					
	22.1.	Required reading				
		No.	Author	Title	Publisher	Year
		1.	C. Spratt, P. Lajbcygier	E-Learning Technologies and Evidence-Based Assessment Approaches,	Information Science Reference	2009
		2.				
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	W. Rice	Moodle E-Learning Course Development: A complete guide to successful learning using Moodle	Packt Publishing	2006
		2.				
		3.				

Serial number: 5

Attachment No. 3		**Course program from the second cycle of studies**			
1.	Name of the course	**Comparative Education and Comparative Educational Systems**			
2.	Code	23IMI21B060			
3.	Study program	Mathematics and Informatics for Teaching, one year studies			
4.	Organizer of the study program (unit, i.e. institute, department, department)	Mother Teresa University Faculty of Information Sciences, Skopje			
5.	Degree (first, second, third cycle)	Second cycle			
6.	Academic year / semester	First year / first semester	7.	Number of ECTS credits	6
8.	Name of the professor	Prof. dr. Samet Qera			
9.	Prerequisites for enrolling in the course	None			
10.	**Course objectives (competencies):** The purpose of this course is for students to become familiar with the concept and meaning of comparative education, so that after completing the course they will be familiar with the educational systems in other countries and the level of knowledge acquired by students in mathematics and informatics at different ages.				
11.	**Course Content:** Educational systems in the USA, Canada, Italy, Russia, Poland, Germany, Norway, China, Turkey, Japan and other countries, their comparison with the Macedonian educational system. The place and role of mathematics and informatics in educational systems in the USA, Canada, Italy, Russia, Poland, Germany, Norway, China, Turkey, Japan and other countries and a comparison with the place and role of mathematics and informatics in the Macedonian educational system.				
12.	Learning methods: Lectures, laboratory exercises, numerical exercises, electronic learning, seminar work, teamwork, consultations.				
13.	Total available time	180 hours			
14.	Allocation of available time	2+1			
15.	Forms of teaching activities	15.1.	Lectures - theoretical teaching .	2 x 15 = 30 hours	
		15.2.	Exercises (laboratory, classroom), seminars, teamwork.	1 x 15 = 15 hours	
16.	Other forms of activities	16.1.	Project tasks	45 hours	
		16.2.	Independent tasks	30 hours	
		16.3.	Home study - assignments	60 hours	
17.	Method of assessment				
	17.1.	Tests		30 points	
	17.2.	Individual work/project (presentation: written and oral)		50 points	
	17.3.	Activity and participation		20 points	
18.	Assessment criteria (points/grade)	up to 50 points		5 (five) (F)	
		from 51 to 60 points		6 (six) (E)	

		from 61 to 70 points	7 (seven) (D)
		from 71 to 80 points	8 (eight) (C)
		from 81 to 90 points	9 (nine) (B)
		from 91 to 100 points	10 (ten) (A)
19.	Requirement for signature and passing the final exam	Attendance 80% of the teaching Submitted individual works and Completed duties of exercises	
20.	Language of instruction	Albanian, Macedonian and English language	
21.	A method of monitoring the quality of teaching	Mechanisms of internal evaluation and surveys	

22. Literature

22.1. Required reading

No.	Author	Title	Publisher	Year
1.	Г. Бижков, Н. Попов	Сравнително образование	Универзитетско издателство, Св. Климент Охридски, Софија	1994
2.	W.H. Schmidt, C.C. McKnight, R.T. Houang, H. Wang, D.E. Wiley, L.S. Cogan, R.G.Wolfe	Why Schools matter	Jossey-Bass, A Wiley Company	2001
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.				
2.				
3.				

Serial number: 6

Attachment No. 3		**Course program from the second cycle of studies**			
1.	Name of the course	**Selected Topics of Probability and Statistics**			
2.	Code	23IMI22A010			
3.	Study program	Mathematics and Informatics for Teaching, one year studies			
4.	Organizer of the study program (unit, i.e. institute, department, department)	Mother Teresa University Faculty of Information Sciences, Skopje			
5.	Degree (first, second, third cycle)	Second cycle			
6.	Academic year / semester	First year / second semester	7.	Number of ECTS credits	6
8.	Name of the professor	Assistant prof. dr. Egzona Iseni Rexhepi			
9.	Prerequisites for enrolling in the course	None			
10.	**Course objectives (competencies):** Students learn modern approaches in the study of contents of functions and probability, as well as learn to apply statistical techniques in research and interpretation of results.				
11.	**Course Content:** Elements of combinatorics. Probability of random events. Properties of probabilities. A discrete probability space. Classical definition. Conditional probability. Bayes rule. Bernoulli scheme. Discrete and continuous distributions. Functions of random variables. Numerous characteristics of random variables: mathematical expectation, dispersion, correlation coefficient between two random variables. Population and sample, basic data processing and descriptive statistics. Basic data processing. Normal distribution, t-distribution, Chi-square and F-distribution. Interval evaluations and hypothesis testing.				
12.	Learning methods: Lectures, books, articles, e-learning, term paper, project, consultations				
13.	Total available time	180 hours			
14.	Allocation of available time	2+1			
15.	Forms of teaching activities	15.1.	Lectures - theoretical teaching .	2 x 15 = 30 hours	
		15.2.	Exercises (laboratory, classroom), seminars, teamwork.	1 x 15 = 15 hours	
16.	Other forms of activities	16.1.	Project tasks	45 hours	
		16.2.	Independent tasks	30 hours	
		16.3.	Home study - assignments	60 hours	
17.	Method of assessment				
	17.1.	Tests		30 points	
	17.2.	Individual work/project (presentation: written and oral)		50 points	
	17.3.	Activity and participation		20 points	
18.	Assessment criteria (points/grade)	up to 50 points		5 (five) (F)	
		from 51 to 60 points		6 (six) (E)	
		from 61 to 70 points		7 (seven) (D)	
		from 71 to 80 points		8 (eight) (C)	
		from 81 to 90 points		9 (nine) (B)	
		from 91 to 100 points		10 (ten) (A)	

19.	Requirement for signature and passing the final exam			Attendance 80% of the teaching Submitted individual works and Completed duties of exercises		
20.	Language of instruction			Albanian, Macedonian and English language		
21.	A method of monitoring the quality of teaching			Mechanisms of internal evaluation and surveys		
22.	Literature					
	22.1.	Required reading				
		No.	Author	Title	Publisher	Year
		1.	Michael Baron	Probability and statistic for computer scientists	Chapman and Hall/CRC	2007
		2.	Верица Бакева	Веројатност	Уким	2015
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Илир Спахиу	Применета Статистика и Веројатност	Тетово	2005
		2.	Лукан Пука	Веројатност и Применета Статистика	Тирана	2010
		3.				

Serial number: 7

Attachment No. 3		**Course program from the second cycle of studies**			
1.	Name of the course	**Selected Topics from Theory of Series**			
2.	Code	23IMI22A020			
3.	Study program	Mathematics and Informatics for Teaching, one year studies			
4.	Organizer of the study program (unit, i.e. institute, department, department)	Mother Teresa University Faculty of Information Sciences, Skopje			
5.	Degree (first, second, third cycle)	Second cycle			
6.	Academic year / semester	First year / second semester	7.	Number of ECTS credits	6
8.	Name of the professor	Associate Prof. dr. Shpetim Rexhepi			
9.	Prerequisites for enrolling in the course	None			
10.	**Course objectives (competencies):** Students learn modern approaches in the study of content from row theory and its application.				
11.	**Course Content:** Need for Fourier series. Periodic functions. Definition of Fourier series. Dichrile conditions. Even and odd functions. Parseval's inequality. Uniform convergence. Derivation and integration of Fourier series. Double Fourier series. Application of Fourier series. Orthogonal functions. Orthonormal sets. Decomposition of functions in orthonormal rows. Parseval's inequality for orthonormal rows. The completeness. Sturm-Louisville systems. Grand-Schmidt process. Application in boundary value problems. Gamma, Beta and other special functions. Fourier integrals (Fourier transforms, convolution theorem for Fourier transforms) and its application.				
12.	Learning methods: Lectures, books, articles, e-learning, term paper, project, consultations.				
13.	Total available time	180 hours			
14.	Allocation of available time	2+1			
15.	Forms of teaching activities	15.1.	Lectures - theoretical teaching .	2 x 15 = 30 hours	
		15.2.	Exercises (laboratory, classroom), seminars, teamwork.	1 x 15 = 15 hours	
16.	Other forms of activities	16.1.	Project tasks	45 hours	
		16.2.	Independent tasks	30 hours	
		16.3.	Home study - assignments	60 hours	
17.	Method of assessment				
	17.1.	Tests		30 points	
	17.2.	Individual work/project (presentation: written and oral)		50 points	
	17.3.	Activity and participation		20 points	
18.	Assessment criteria (points/grade)	up to 50 points		5 (five) (F)	
		from 51 to 60 points		6 (six) (E)	
		from 61 to 70 points		7 (seven) (D)	
		from 71 to 80 points		8 (eight) (C)	

			from 81 to 90 points	9 (nine) (B)	
			from 91 to 100 points	10 (ten) (A)	
19.	Requirement for signature and passing the final exam		Attendance 80% of the teaching Submitted individual works and Completed duties of exercises		
20.	Language of instruction		Albanian, Macedonian and English language		
21.	A method of monitoring the quality of teaching		Mechanisms of internal evaluation and surveys		
22.	Literature				
	22.1.	Required reading			
		No.	Author	Title	Publisher	Year
		1.	Murray R. Spiegel	Theory and problems of fourier Analysis	McGraw-Hill Book Company	1974
		2.	Konrad Knopp	Theory and application of infinite series	Glasgow	1990
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Paul Loya	Advenced theory of infinite series	Springer, New York,	2017
		2.				
		3.				

Serial number: 8

Attachment No. 3		**Course program from the second cycle of studies**			
1.	Name of the course	**Functional Analysis**			
2.	Code	23IMI22A030			
3.	Study program	Mathematics and Informatics for Teaching, one year studies			
4.	Organizer of the study program (unit, i.e. institute, department, department)	Mother Teresa University Faculty of Information Sciences, Skopje			
5.	Degree (first, second, third cycle)	Second cycle			
6.	Academic year / semester	First year / second semester	7.	Number of ECTS credits	6
8.	Name of the professor	Assistant prof. dr. Teuta Jusufi Zenku			
9.	Prerequisites for enrolling in the course	None			
10.	**Course objectives (competencies):** Students learn modern approaches in studying the content of functions and how to learn the application of the subject.				
11.	**Course Content:** Zorno's lemma and axiom of choice. Metric spaces. Compactness. Continuous functions. Normed spaces. Examples of Banach spaces. Elementary inequalities. Lebesgue spaces. Spaces of bounded and unbroken spaces. Bounded linear operators. Equivalent norms. Finite normed spaces. Infinite normed spaces. Hilbert spaces. Orthogonal systems. Abstract Fourier series. Bair's theorem. Open mapping theorem. Closed Mapping Theorem. Closed operator and examples. Dual spaces. Hahn Banach theorem. Reflective spaces. Poor convergence. Dual operator. Duality in Hilbert spaces. Spectral theory.				
12.	Learning methods: Lectures, books, articles, e-learning, term paper, project, consultations.				
13.	Total available time	180 hours			
14.	Allocation of available time	2+1			
15.	Forms of teaching activities	15.1.	Lectures - theoretical teaching .	2 x 15 = 30 hours	
		15.2.	Exercises (laboratory, classroom), seminars, teamwork.	1 x 15 = 15 hours	
16.	Other forms of activities	16.1.	Project tasks	45 hours	
		16.2.	Independent tasks	30 hours	
		16.3.	Home study - assignments	60 hours	
17.	Method of assessment				
	17.1.	Tests		30 points	
	17.2.	Individual work/project (presentation: written and oral)		50 points	
	17.3.	Activity and participation		20 points	
18.	Assessment criteria (points/grade)	up to 50 points		5 (five) (F)	
		from 51 to 60 points		6 (six) (E)	
		from 61 to 70 points		7 (seven) (D)	
		from 71 to 80 points		8 (eight) (C)	
		from 81 to 90 points		9 (nine) (B)	

				from 91 to 100 points	10 (ten) (A)	
19.	Requirement for signature and passing the final exam			Attendance 80% of the teaching Submitted individual works and Completed duties of exercises		
20.	Language of instruction			Albanian, Macedonian and English language		
21.	A method of monitoring the quality of teaching			Mechanisms of internal evaluation and surveys		
22.	Literature					
	22.1.	Required reading				
		No.	Author	Title	Publisher	Year
		1.	Theo Buhler, Dietmar A. Salamon	Functional analysis	EtH Zurich	2017
		2.	Daniel Daner	Introduction to functional analysis	University of Sidney	2017
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	S. Kurepa	Funkcionalna analiza	Skolska Knjiga, Zagreb	1981
		2.				
		3.				

Serial number: 9

Attachment No. 3		**Course program from the second cycle of studies**			
1.	Name of the course	**Master Thesis**			
2.	Code	23IMI22A040			
3.	Study program	Mathematics and Informatics for Teaching, one year studies			
4.	Organizer of the study program (unit, i.e. institute, department, department)	Mother Teresa University Faculty of Information Sciences, Skopje			
5.	Degree (first, second, third cycle)	Second cycle			
6.	Academic year / semester	First year / second semester	7.	Number of ECTS credits	6
8.	Name of the professor	The teaching staff of the Faculty of Information Sciences and the University "Mother Teresa" in Skopje can be a mentor for a master's thesis			
9.	Prerequisites for enrolling in the course	None			
10.	**Course objectives (competencies):** Students aim to develop a software application and analyze it in detail, using knowledge from the subjects they have followed during their studies.				
11.	**Course Content:** Each student works individually with the help of the chosen mentor on the chosen topic, which it must be previously approved by the Teaching and Research Council of the Faculty of Information Sciences. After completing the mentoring phase and checking the student's file, the student submits an Application for the public defense of the master's thesis before the Commission and the audience to the Teaching and Research Council of the Faculty of Information Sciences during the regular examination session. If the Educational Scientific Council of the Faculty of Information Sciences accepts the Application, the Educational Scientific Council of the Faculty of Information Sciences makes a decision on the establishment of a commission for the review of the master's thesis, which includes the mentor as a member. If the Academic Scientific Council of the Faculty of Information Sciences accepts the peer review, the Academic Scientific Council of the Faculty of Information Sciences makes a decision on the formation of a committee for the public defense of the master's thesis, which includes the mentor as a member. Then as the final act is the public defense of the master's thesis before a committee and an audience.				
12.	Learning methods: interactive teaching, practical teaching, laboratory exercises, seminar work.				
13.	Total available time	180 hours			
14.	Allocation of available time	2			
15.	Forms of teaching activities	15.1.	Consultations		2 x 15 = 30 hours
		15.2.			
16.	Other forms of activities	16.1.	Independent learning and working		150 hours
		16.2.			
		16.3.			
17.	Method of assessment				
	17.1.	Individual work/project (presentation: written and oral)			80 points
	17.2.	Activity and participation			20 points
	17.3.				
18.	Assessment criteria (points/grade)		up to 50 points		5 (five) (F)

				from 51 to 60 points	6 (six) (E)	
				from 61 to 70 points	7 (seven) (D)	
				from 71 to 80 points	8 (eight) (C)	
				from 81 to 90 points	9 (nine) (B)	
				from 91 to 100 points	10 (ten) (A)	
19.	Requirement for signature and passing the final exam			Passed all courses in the study program		
20.	Language of instruction			Albanian, Macedonian and English language		
21.	A method of monitoring the quality of teaching			Mechanisms of internal evaluation and surveys		
22.	Literature					
	22.1.	Required reading				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Serial number: 10

Attachment No. 3		**Course program from the second cycle of studies**			
1.	Name of the course	**Educational Software for Mathematics and Informatics**			
2.	Code	23IMI22B050			
3.	Study program	Mathematics and Informatics for Teaching, one year studies			
4.	Organizer of the study program (unit, i.e. institute, department, department)	Mother Teresa University Faculty of Information Sciences, Skopje			
5.	Degree (first, second, third cycle)	Second cycle			
6.	Academic year / semester	First year / second semester	7.	Number of ECTS credits	6
8.	Name of the professor	Assistant prof. dr. Stojan Kitanov			
9.	Prerequisites for enrolling in the course	None			
10.	**Course objectives (competencies):** The student is trained to use mathematical/informatics educational software for the visualization of teaching and the achievement of educational goals and tasks in the appropriate area.				
11.	**Course Content:** 1. Need and benefits of using educational software in mathematics / informatics teaching, standardization and evaluation 2. Software packages: Mathematca, Math Lab, La Tex, Maple, Cabri, GeoGebra, EduBuntu and others 3. Development and practical realization of teaching content in one of the program packages				
12.	Learning methods: interactive teaching, practical teaching, laboratory exercises, seminar work.				
13.	Total available time	180 hours			
14.	Allocation of available time	2+1			
15.	Forms of teaching activities	15.1.	Lectures - theoretical teaching .	2 x 15 = 30 hours	
		15.2.	Exercises (laboratory, classroom), seminars, teamwork.	1 x 15 = 15 hours	
16.	Other forms of activities	16.1.	Project tasks	45 hours	
		16.2.	Independent tasks	30 hours	
		16.3.	Home study - assignments	60 hours	
17.	Method of assessment				
	17.1.	Tests	30 points		
	17.2.	Individual work/project (presentation: written and oral)	50 points		
	17.3.	Activity and participation	20 points		
18.	Assessment criteria (points/grade)	up to 50 points	5 (five) (F)		

		from 51 to 60 points	6 (six) (E)
		from 61 to 70 points	7 (seven) (D)
		from 71 to 80 points	8 (eight) (C)
		from 81 to 90 points	9 (nine) (B)
		from 91 to 100 points	10 (ten) (A)
19.	Requirement for signature and passing the final exam	Attendance 80% of the teaching Submitted individual works and Completed duties of exercises	
20.	Language of instruction	Albanian, Macedonian and English language	
21.	A method of monitoring the quality of teaching	Mechanisms of internal evaluation and surveys	

22. Literature

22.1. Required reading

No.	Author	Title	Publisher	Year
1.	Judith Hohenwarter, Markus Hohenwarter	Вовед во Геогебра	http://geogebramk.pbworks.com/f/voved-mk_LFS_VP3.pdf	2009
2.		EDUBuntu Manual	EU	2010
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.				
2.				
3.				

Serial number: 10

Attachment No. 3		**Course program from the second cycle of studies**			
1.	Name of the course	**Creation of Digital Educational Contents**			
2.	Code	23IMI22B060			
3.	Study program	Mathematics and Informatics for Teaching, one year studies			
4.	Organizer of the study program (unit, i.e. institute, department, department)	Mother Teresa University Faculty of Information Sciences, Skopje			
5.	Degree (first, second, third cycle)	Second cycle			
6.	Academic year / semester	First year / second semester	7.	Number of ECTS credits	6
8.	Name of the professor	Assistant prof. dr. Stojan Kitanov			
9.	Prerequisites for enrolling in the course	None			
10.	**Course objectives (competencies):** Students to understand the principles and technologies in multimedia systems, as well as familiarization with the ways of processing, exchanging and extracting multimedia data.				
11.	**Course Content:** Algorithms and standards for compression of data, images, video, 3D graphics and audio; Color patterns; Forensics and multimedia security – digital watermarks and Digital Rights Management, data hiding and hidden channels; Protocols for video transport, signaling, session description and presentation; Architecture of integrated services and provision of QoS, QoS in wireless networks.				
12.	Learning methods: interactive teaching, practical teaching, laboratory exercises, seminar work.				
13.	Total available time	180 hours			
14.	Allocation of available time	2+1			
15.	Forms of teaching activities	15.1.	Lectures - theoretical teaching .	2 x 15 = 30 hours	
		15.2.	Exercises (laboratory, classroom), seminars, teamwork.	1 x 15 = 15 hours	
16.	Other forms of activities	16.1.	Project tasks	45 hours	
		16.2.	Independent tasks	30 hours	
		16.3.	Home study - assignments	60 hours	
17.	Method of assessment				
	17.1.	Tests		30 points	
	17.2.	Individual work/project (presentation: written and oral)		50 points	
	17.3.	Activity and participation		20 points	
18.	Assessment criteria (points/grade)	up to 50 points		5 (five) (F)	
		from 51 to 60 points		6 (six) (E)	
		from 61 to 70 points		7 (seven) (D)	
		from 71 to 80 points		8 (eight) (C)	
		from 81 to 90 points		9 (nine) (B)	

			from 91 to 100 points	10 (ten) (A)	
19.	Requirement for signature and passing the final exam		Attendance 80% of the teaching Submitted individual works and Completed duties of exercises		
20.	Language of instruction		Albanian, Macedonian and English language		
21.	A method of monitoring the quality of teaching		Mechanisms of internal evaluation and surveys		
22.	Literature				
	22.1.	Required reading			
		No.	Author	Title	Publisher	Year
		1.	P. Havaldar, G. Medioni	Multimedia Systems: Algorithms, Standards, and Industry Practices	Course Technology	2009
		2.	Ze-Nian Li, Mark S. Drew	Fundamentals of multimedia	Prentice Hall	2003
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				