UNIVERSITETI "KADRI ZEKA" UNIVERSITY

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SYLLABUS

Course: ***Metric Spaces***

Basic information of the course	
Academic unit:	**FAS**
Course Title:	**METRIC SPACES**
Level:	**Bachelor**
Program:	**Mathematic Education**
Course status:	**Elective**
Academic year:	**2019/2020**
Year of study:	**Year III, Semester V**
Number of hours per week:	**2+2**
Credits – ECTS:	**5 ECTS**
Timer / Location:	
Professor of subject:	**Prof. Ass. Dr.**
Contact details:	
Description, Objectives and expected resultes	
Course description:	***Contents of the course include*: Metric spaces; Topological spaces; Haussdorf spaces; Connecting spaces; The Arzela-Ascoli Theorem.**
Objectives of the course:	***Metric spaces* aim to integrate training of professionals in the field of science mathematics education bachelor studies.** **The course objective is to acquaint students with the basics of knowledge in *Metric spaces*. Another goal is to develop the skills and abilities of students so that they successfully solve concrete problems in field of mathematics whenever required implementation *Metric spaces.***
Expected learning outcomes:	**After successful completion of the course *Metric spaces*, students will be able to:** • **gain an appreciation for the role playing the metric spaces.** • **Learn the meaning of topological spaces and their use.** • **Achieve a skill in solving specific problems.** • **Develop critical thinking and enhance justification for solving various problems**

Student contribution			
Activity	Hours	Day / Week	Total
Lectures	2	15	30
Theoretical exercises / laboratory	2	15	30

Contacts with teacher / consultations	1	15	15
Collocfiums, seminars	3	2	6
Homework	1	15	15
Self-learning time student (at the library or at home)	1	15	15
Final preparation for the exam	2	15	30
Projects, seminars, presentations, etc.	3	3	9
Total			**150**
150:25≈6 ECTS.			

Teaching methodology and assessment methods	
Teaching methodology:	**Regular lessons, lectures, consultations, discussions, individual independent work, term papers (homework), presentations.**
Methods of assessment:	**The exam consists of a written part and the oral part.** **The assessment is based on the following activities:** **Participation and engagement in hours (10%)** **(Koll.) Test 1-40% (written examination)** **(Koll.) Test 2-40% (written examination)** **Seminar papers (individual independent work) - 10%** **Final exam:** **80% (for those who do not pass colloquiums).** **Points Score** **91-100 10** **81-90 9** **71-80 8** **61-70 7** **51-60 6**
Literature	
Base literature:	• **Qamil Haxhibeqiri, Topologjia, ETMM i Kosovës, 1989, Prishtinë** • **Booth, A.D..P. Analytic Toplogy Lecture Notes, Berkeley, 2006, University of california** • **W. Sutherland, Introduction to Metric and Topological Spaces, Oxford University Press, 1975.** • **J. Dugundji, Topology, Allyn & Bacon, 1966.** • **K. Jänich, Topology, Springer Verlag, 1995.**
Designed teaching plan:	
Week	**The lecture to be held**
I - week :	Metric space (examples, open e close sets)
II - week :	Metric space (equivalent metrics spaces, continuous functions)
***III - week*:**	Topological spaces. (Topological structures, base, subbase, subspaces).
IV - week :	Topological spaces. (Product spaces, Coefficient spaces, Homeomorphism).
V - week:	Hausdorff spaces (Examples, properties)
VI- week	Hausdorff spaces (Continuous maps in compact spaces, compactness in R^n , uniform continuous and compactness)
VII-week	The first colloquium .
VIII-week	Definition of connected spaces. Examples.
IX-week	Properties of connected spaces.
X-week	Complete metric spaces (Banach theorem)

XI-week	Complete metric spaces (Cantorov theorem)
XII-week	Complete metric spaces (Baierov theorem etc)
XIII-week	Proof of the Arzela-Ascoli Theorem.
XIV-week	Examples of the Arzela-Ascoli Theorem
XV-week	The second colloquium .
Academic policies and rules of etiquette:	
Regular attendance of students assessed with 10 points, **- Students are free to ask questions and active participation in all teaching activity.** **- They are not allowed cell phones, late arrival or departure from the class without reason.** **- Plagiarism and copying in exams are penalized under the statute and other regulations of the university.** **- The Code of conduct applies to both students and teachers.**	