



## UNIVERSITETI “KADRI ZEKA” UNIVERSITY

Zija Shemsiu, 60000, Gjilan, Kosovë  
 www.uni-gjilan.net tel: 0280-390-112

### SYLLABUS

#### Course: Algebra 1

Basic information of the course			
Academic unit:	FAS		
Course Title:	Algebra 1		
Level:	Bachelor		
Program:	Mathematic Education		
Course status:	Obligatory		
Academic year:	2019/2020		
Year of study:	Year I, Semester I		
Number of hours per week:	3+2		
Credits – ECTS:	7 ECTS		
Timer / Location:			
Professor of subject:	Prof. Ass. Dr.		
Contact details:			
Description, Objectives and expected results			
Course description:	The content of <i>Algebra 1</i> includes: Understanding the group; Isomorphism between groups; Group decomposition in relation to subgroups; Rings; Fields; Ideals; Polynomials with a variable; Polynomial rings with a variable; Polynomials; the roots of the polynomial; polynomials over the field of complex numbers; Variable polynomials.		
Objectives of the course:	<i>Algebra 1</i> aims at integrating professional training in the field of mathematics education of bachelor studies. The course objectives are for the student to start with basic knowledge in the Algebra field. Another challenge is to develop students' abilities and skills to succeed in solving concrete problems in the field of mathematics whenever the need for Algebra implementation is required.		
Expected learning outcomes:	After successful completion of the course <i>Algebra 1</i> , students will be able to: <ul style="list-style-type: none"> <li>• Recognize and understand the group definition, isomorphism between groups, and implement this knowledge by solving various problems.</li> <li>• Recognize and understand the concept of ring and ideal.</li> <li>• Recognize and understand polynomials and their properties.</li> </ul>		
Student contribution			
Activity	Hours	Day / Week	Total
Lectures	3	15	45
Theoretical exercises / laboratory	2	15	30
Contacts with teacher / consultations	1	15	15

Colloquiums, 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	1	9										
Total			<b>165</b>										
<b>165:25≈7 ECTS.</b>													
<b>Teaching methodology and assessment methods</b>													
Teaching methodology:	Regular lessons, lectures, consultations, discussions, individual independent work, term papers (homework), presentations.												
Methods of assessment:	<p>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 kollokfiomet).  Points Score</p> <table> <tr> <td>91-100</td> <td>10</td> </tr> <tr> <td>81-90</td> <td>9</td> </tr> <tr> <td>71-80</td> <td>8</td> </tr> <tr> <td>61-70</td> <td>7</td> </tr> <tr> <td>51-60</td> <td>6</td> </tr> </table>			91-100	10	81-90	9	71-80	8	61-70	7	51-60	6
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81-90	9												
71-80	8												
61-70	7												
51-60	6												
<b>Literature</b>													
Base literature:	<ul style="list-style-type: none"> <li>• Ligjerata të autorizuar nga profesori, Gjilan. 2019.</li> <li>• Tanush Shaska, Lubjana Beshaj: Algebra, ISBN: 978-1-60985-003-6</li> <li>• T. W. Hungerford, Algebra, Springer Verlag, 1996.</li> <li>• Emrush Gashi, Kursi i Algjibrës Lartë, FSHMN, Univerziteti i Prishtinës, 1980</li> <li>• S. Lang, Algebra, Addison-Wesley, 1984.</li> <li>• Ejup Hamiti, Matematika I, Fakulteti Teknik, UP, 1987, Prishtinë</li> <li>• Nicolas Bourbaki, (Elements of Mathematics), Algebra I, 1971, Paris.</li> <li>• Petraq Petro, Ushtrime për simbolet logjike, bashkësit, metodën e induksionit matematikë, relacionet, pasqyrimet, veprimet algjebrike, grupet, unazat, trupat dhe fushat. Tiranë 2010.</li> </ul>												
<b>Designed teaching plan:</b>													
Week	The lecture to be held												
<i>I - week :</i>	Groups, basic definitions.												
<i>II - week :</i>	Subgroups and examples of subgroups.												
<i>III - week :</i>	Cyclic Subgroups. examples of cyclic subgroups												
<i>IV - week :</i>	Normal Subgroups. Group Factor Group. Lagrange Theorem												
<i>V - week :</i>	Homomorphism. Homomorphism theorems												
<i>VI - week</i>	Isomorphism of groups. Theorems for group isomorphism.												
<i>VII-week</i>	The first colloquium												
<i>VIII-week</i>	Definition of rings. Examples.												

<i>IX-week</i>	Definition of ideal. Examples.
<i>X-week</i>	Simple ideals and maximal ideals.
<i>XI-week</i>	Simple elements of ring and irreducible elements of ring.
<i>XII-week</i>	Polynomial with one variable; Polynomial rings with one variable;
<i>XIII-week</i>	Polynomials; the roots of the polynomial; polynomials over the field of complex numbers;
<i>XIV-week</i>	Polynomials with more variables.
<i>XV-week</i>	The second colloquium
<b>Academic policies and rules of etiquette:</b>	
<p>Regular attendance of students assessed with 10 points,</p> <ul style="list-style-type: none"> <li>- Students are free to ask questions and active participation in all teaching activity.</li> <li>- They are not allowed cell phones, late arrival or departure from the class without reason.</li> <li>- Plagiarism and copying in exams are penalized under the statute and other regulations of the university.</li> <li>- The Code of conduct applies to both students and teachers.</li> </ul>	