

Faculty of Philosophy / TEACHER`S EDUCATION / Mathematics II

Course:	Mathematics II			
Course ID	Course status	Semester	ECTS credits	Lessons (Lessons+Exercises+Laboratory)
818	Mandatory	2	5	3+1+0
Programs	TEACHER`S EDUCATION			
Prerequisites	There are no pre-conditions for the attendance of this course.			
Aims	Students will become familiar with the construction of the set of natural numbers and its properties			
Learning outcomes	Upon the completion of this course, the student will show the ability to: 1. Describe the set of natural numbers; 2. Calculate the value of expression containing natural numbers and the operations of addition and multiplication; 3. Define the order relation and "shared" relation on the set \mathbb{N} , and prove basic theorems in connection with these relations; 4. Determine the lowest common denominator and the greatest common divisor of certain natural numbers; 5. Determine the greatest common divisor of two integers by applying the Euclidean algorithm; 6. Recognize and list prime and composite numbers; 7. Prove the assertions relating to the natural numbers using mathematical induction.			
Lecturer / Teaching assistant	Marijan Marković, Ph.D.			
Methodology	Lectures, seminars, homework, tests.			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	Natural numbers			
I week exercises	Natural numbers			
II week lectures	Operations in the set of natural numbers			
II week exercises	Operations in the set of natural numbers			
III week lectures	Properties of operations in the set of natural numbers			
III week exercises	Properties of operations in the set of natural numbers			
IV week lectures	Order in the set of natural numbers			
IV week exercises	Order in the set of natural numbers			
V week lectures	Divisibility			
V week exercises	Divisibility			
VI week lectures	Primes. The greatest common divisor. The lowest common denominator			
VI week exercises	Primes. The greatest common divisor. The lowest common denominator			
VII week lectures	First test			
VII week exercises	First test			
VIII week lectures	Writing of natural numbers			
VIII week exercises	Writing of natural numbers			
IX week lectures	Criteria of divisibility			
IX week exercises	Criteria of divisibility			
X week lectures	Peano system of axioms			
X week exercises	Peano system of axioms			
XI week lectures	Operations in Peano system of axioms			
XI week exercises	Operations in Peano system of axioms			
XII week lectures	Mathematical induction			
XII week exercises	Mathematical induction			
XIII week lectures	Combinatorics. Permutations			
XIII week exercises	Combinatorics. Permutations			
XIV week lectures	Second test			

XIV week exercises	Second test					
XV week lectures	Additional test					
XV week exercises	Additional test					
Student workload	WEEKLY : 5 credits x 40/30 = 6 hours 40 min; Structure: 2 hours of lectures; 2 hours of seminars; 2 hours and 40 min of independent work including office hours and homework; PER SEMESTER: Class attendance and final exams: (6 hours and 40 min) x 16 = 106 hours and 40 min; Necessary preparations before the beginning of the semester (administration, enrolment, verification): 2 x (6 hours and 40 min) = 13 hours and 20 min; Total: 5 x 30 = 150 hours; Additional work for the preparation of the make-up exam: 0 - 30 hours; Structure: 106 hours and 40 min(classes) + 13 hours and 20 min(preparation) + 30 hours(additional work).					
Per week	Per semester					
5 credits x 40/30=6 hours and 40 minuts 3 sat(a) theoretical classes 0 sat(a) practical classes 1 excercises 2 hour(s) i 40 minuts of independent work, including consultations	Classes and final exam: 6 hour(s) i 40 minuts x 16 =106 hour(s) i 40 minuts Necessary preparation before the beginning of the semester (administration, registration, certification): 6 hour(s) i 40 minuts x 2 =13 hour(s) i 20 minuts Total workload for the subject: 5 x 30=150 hour(s) Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) 30 hour(s) i 0 minuts Workload structure: 106 hour(s) i 40 minuts (courses), 13 hour(s) i 20 minuts (preparation), 30 hour(s) i 0 minuts (additional work)					
Student obligations	Students are obliged to attend lectures and seminars regularly, to actively participate in the classes, to do homework and take the tests and exams					
Consultations	After the lectures and seminars					
Literature	B. Cerović, Matematika, Univerzitet Crne Gore, 2001. godina. S. Milić, Elementi matematičke logike i teorije skupova, PMF, Novi Sad, 1981.					
Examination methods	Grading is structured within the scale 0-100% of the mastered material, while the passing grade will be achieved with the accumulation of 51% of the total material, as follows: Attendance and Homework - 10 points; Tests - 40 points; Final exams - 50 point					
Special remarks						
Comment						
Grade:	F	E	D	C	B	A
Number of points	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points