Program	Level		First cycle		
	Name of the program		All Study Programs		

COURSE

Course title	**Introduction to Mathematics**				
Course code	Semester	Course status		ECTS	Contact hours (L+AE+LE)
PMAT 130	I	Mandatory course		5	3+2+0
Lecturer					
Course Goals	- To acquire high-quality knowledge of the proposition logic and the predicate logic, - To adopt the laws of correct and true judgment, - To found the sets of numbers axiomatically.				
Learning Outcomes	- To know the basic laws of judgment, proposition and predicate tautologies, basic forms of inference and proving, - Deriving conclusions from premises consciously, proving various claims, - To possess high-quality general and particular knowledge of numbers and the corresponding operations.				

COURSE CONTENT

- Elements of the proposition logic. Operations on propositions. Interpretations.
- Tautologies. Semantic equivalent formulas.
- Elements of predicate logic. Definitions and examples.
- Quantifiers.
- Terms, definitions, proving and inference.
- Sets, relations, functions.
- Operations and algebraic structures.
- Peano's axioms. First recursive theorem. Addition and multiplication of natural numbers.
- Order of the set of natural numbers. Second recursive theorem.
- Integers. Integral domains. Order of: integral domains, the set of integers. Absolute value.
- Rational numbers. Order of the field of rationals.
- Sequences over rationals, fundamental sequences.
- Real numbers.
- Complex numbers.

LITERATURE

1. M. Pepić, *Uvod u matematiku*, *prvo izdanje*, UM BIH, Sarajevo, 2000.
2. V. Stojanović, *Matematiskop 3*, *odabrani zadaci (sa rješenjima)*, Nauka, Beograd, 1988.
3. R. Živković, H. Fatkić i Z. Stupar, *Zbirka zadataka iz matematike sa rješenjima uputama i rezultatima*, prvo izdanje, Svjetlost, Sarajevo, 1987.

STUDENT WORKLOAD (hours in a semester)

Lectures	45	Exercises	30	Individual work	50	T o t a l	125

GRADING				REMARKS	
Criterion	Maximum points	Minimum points			
Midterm exams	100	55			
Final exam	100	55			
T o t a l	100	55			