Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
MAT364	Introduction to Number Theory	6	5	0	0	3	5

Prerequisites	
Admission Requirements	

Language of Instruction	English
Course Type	Elective
Course Level	Bachelor Degree
Objective	In this course, we will go over some introductory topics in number theory.
Content	Divisibility, Prime Numbers, Modular Arithmetics, Multiplicative Functions, Diaphontine Equations, Rational Approximations, Continued Fractions
References	An Introduction to the Theory of Numbers-Ivan Niven, Herbert S. Zuckerman, Hugh L. Montgomery

Theory Topics

Week	Weekly Contents
1	Divisibility, Euclidean Algorithm, Greatest Common Divisor Function
2	Primes, Fundamental Theory of Arithmetics
3	Binomial Theorem, Pascal Triangle
4	Modular Arithmetics
5	Solutions of modular equations, Chinese Remainder Theorem
6	Primitive Roots
7	Midterm
8	Greatest Integer Function
9	Multiplicative Functions
10	Möbius Inversion
11	Diophantine Equations
12	Markov Equation, Vieta Jumps
13	Farey Tree, Rational Approximations
14	Continued Fractions