Course Specifications

General Information

Course name	Number Theory
Course number	MATH4329
Faculty	
Department	
Course type	Major Needs
Course level	4
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - Develop mathematical and logical arguments and proofs
2 - Discover the hiden relations between numbers
3 - Increase the ability of student in solving numerical problems that faces him in daily life
4 - Make judgements and evaluation for different appoaches of mathematical proofs

Intended Learning Outcomes

Knowledge and Understanding	* Understand and state clearly the key definitions and theorems * Solving numerical equations and congruences * Using mental abilities to perform mathematical computations * Realize the importance of numbers in our daily life
Intellectual Skills	* Using mental abilities to perform mathematical computations rather than using calculators * Dealing quickly and easily with numbers

Course Contents

1 - Divisibility of integers
2 - Division algorithm
3 - Prime numbers and the fundamental theorem of arithmetic
4 - Multipicative functions
5 - Congruences
6 - Chinese remainder theoream
7 - Theorems of Fermat and Euler
8 - Quadratic residues
9 - Quadratic law of reciprocity

Teaching and Learning Methods

1 - Lectures
2 - Discussions
3 - Assignments

Students Assessment

Assessment Method	TIME	MARKS
First mid-term exam	4th. week	20
Second mid-term exam	8th. week	20
Attendance and discussion		5
Homework		5
Final exam	End of the semester	50

Books and References

Essential books	Elementary number theory, Charles V. Eynden, second edition
Recommended books	An introduction to theory of numbers, Ivan S. Niven, fifth edition
	Elementary number theory, David Burton