Course Description

Department of Mathematics

Nature of the course ☐required ■elective	Area 麻煩老師勾選類別，或直接填寫＿＿＿＿＿＿＿＿＿＿。 ■ Algebra ☐ Analysis ☐ Geometry ☐ Statistics ☐ Applied Mathematics ☐ Discrete Mathematics ☐ Others				
Calculus ☐ Calculus A ☐ Calculus B					
Course number	201 24500	Section number		Number of credits	3
Course title	INTRODUCTORY NUMBER THEORY 初等數論				
Instructor	Chu Huah [朱樺]				

I. ＊**Contents**：

1. Pythagorean Triples.
2. Fundamental Theorem of Arithmetic.
3. Fermat's Little Theorem.
4. Mersenne Primes.
5. Primitive Roots Modulo p.
6. Quadratic Reciprocity.
7. Pell's Equation.
8. Primality Testing.
9. The Gaussian Integers.
10. Linear Recurrence Sequences.
11. Elliptic Curves.
12. Fermat's Last Theorem.

II. **Course prerequisite**：

III. ＊**Reference material (textbook(s))**：

Text book: Joseph H. Silverman A Friendly Introduction to Number Theory, 2nd ed. Pearson Education Taiwan Ltd. 2004.

IV. ＊**Grading scheme**：請填寫各項計分之百分比，例如：期中 30% 期末 40% 作業 10% 報告 20%，總計 100%

Examination 60%
Exercises 40%

V. **Others**：

VI. ＊**Course Goal**：

Teach students to think for themselves and to solve substantial problems, rather than merely memorizing formulas and performing rote algebraic manipulations.