Department of Mathematics **Faculty of Science**

MATH 427 (206427) **THEORY OF NUMBER II** **3(3/3-0/0)**

Prerequisite MATH 327 (206327)

Course Description

Arithmetical functions. Continued fraction. Quadratic algebraic number fields. Geometry of numbers.

Course Contents	**No. of Lecture Hours**
1. Arithmatical functions	7
- Multiplicative functions	
- Perfect, abundant and deficient numbers	
- Euler's function and Mobius function	
2. Continued fraction	15
- Simple continued fraction	
- Continued fraction algorithm	
- Infinite simple continued fraction	
- Periodic continued Fraction	
3. Quadratic algebraic number fields	15
- Minimum polynomial	
- Characteristic polynomial	
- Discriminant	
- Algebraic integer	
- Fundemental basis	
- Unit in real quadratic fields	
4. Geometry of numbers	8
- Lattice	
- Basis	
- Fundamental parallelopiped	
- Minkowski's theorem	
Total	**45**