

Course title: Discrete Mathematics II.	Neptun code: GEMAN403-a
Course coordinator: Jenő Szigeti, professor of mathematics	
type and number of lesson: 6 occasions/semester	
method of accountability: submission and discussion of a detailed presentation	
curriculum location of the subject: autumn/spring	
pre-study conditions: none	
The task and purpose of the subject:	
Combinatorial aspects of algebra, introduction to the theory of rings	
Course description:	
Polynomials in many variables, Hilbert's Nullstellensatz. Symmetric polynomials. Noncommutative rings: Wedderburn-Artin Theory, Jacobson radical theory, prime and semiprime rings. local and semilocal rings. Short introduction to lattice theory. Linear algebra in lattices. Matrix algebras: Cayley-Hamilton theorem, Amitsur-Levitzki theorem and directed graphs	
Required literature:	
<ol style="list-style-type: none"> 1. T.Y. Lam: A first course in noncommutative rings, Springer GTM, 2. M. Nagata: Local rings, Wiley, 3. G. Gratzer: Lattice Theory, Springer 2. L.H. Rowen: Ring Theory Vols I., II, Academic Press 	
Recommended literature:	
<ol style="list-style-type: none"> 1. Stephan Foldes: Fundamental Structures of Discrete Mathematics, Wiley 	