

Course No.	430.216	Lecture No.	001	Course Title (Subtitle)	Linear Algebra for Electrical Systems	Credit	3	
Representative Instructor	Name	Choi, Jin Young post : Professor)			Homepage	pil.snu.ac.kr		
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	Interview Time/Place : 1Buld. 133, Room 406							
*1.Purpose of Course	This course teaches the student not only the basic theoretical concepts but also how to prove the theorems and understand the principle of linear algebra. It emphasizes the basic concept of linear algebra and covers vector spaces, linear transformations and matrices. The course requires that the students develop problem-solving skills and understand how to make the transition from various problems to vector space models. Such skills and understanding can be obtained only when the student fully understands the basic concept of linear algebra.							
*2.Materials and Reference	Materials-linear algebra-S.H. Friedberg et. al.-Prentice Hall-2003							
*3.Evaluation Method	Attendance	Task	Medium	Final	Random Evaluation	Attitude	Other	Total
			20, 20, 20	20	20	0	0	100
	기타 :							
* 4. 강의계획	강의내용							
	1 주: Field and vector space, Subspace, Linear combination, Linear independence 2주: Basis and dimension of space, Linear transformation and Matrices 3주: Null space and Range, Matrix representation of a linear transformation 4주: Composition of linear transformations 5주: Invertibility and isomorphism, Change of Basis, Elementary matrix operation 6주: System of linear equations, Gaussian elimination, Determinant 7주: Properties of determinant, Diagonalization, Eigenvalue & Eigenvector 8주: Characteristic polynomial, Diagonalizability 9주: Eigenspace, Direct sum, Cayley-Hamilton theorem 10주: Inner product, norm, Gram-Schmidt orthogonalization 11주: Orthogonal complement, Orthogonal projection, Adjoint, Least square approximation 12주: Minimal solution, Normal and self-adjoint operator 13주: Unitary and orthogonal operator, Orthogonal projection, Spectral theorem 14주: Singular value decomposition, Pseudoinverse, Jordan canonical form 15주: Derivative of Matrix-Vector Function, Optimization							
5. 수강생 참고사항								