

SYLLABUS

Classification: Type: Selective Course No.: EC5102 Cr. Hrs.: 3

Instructor: Prof. Byoung S. Ham, Dasan 205, ext. 3502, bham@gist.ac.kr

Office hour: Tues. 12:00-13:00

Course Title: Linear Algebra and Its Applications

Course Outline: The main focus is getting the concept of Linear Algebra itself. A matrix equation is explained with a row picture but also with a column picture. It will cover vector spaces, orthogonality of vectors and vector spaces, determinants, matrix diagonalization, eigenvalue problems, and similarity transformations. Many applications will be handled to enlarge the understanding of the world of linear algebra.

Textbook and References:

- *Textbook:* Linear Algebra and its applications, 4th ed. (Gilbert Strang, Brooks)

- *Reference:*

1. Linear algebra with applications, 3rd ed., (Gareth Williams, WCB)

2. Linear algebra, 3rd ed., (Serge Lang, Springer)

<i>Weekly Course Schedule</i>		
<i>Calendar</i>	<i>Description</i>	<i>Remarks</i>
<i>1 week</i>	Vector Presentation of Matrix Equation	
<i>2~3 week</i>	Gaussian Elimination and <i>LDU</i> Decomposition	
<i>4~5 week</i>	Vector Spaces	
<i>6~7 week</i>	Orthogonality in Matrix Equation	
<i>8 week</i>	Midterm Examination	
<i>9~10 week</i>	Determinant and its applications	
<i>11 week</i>	Matrix Diagonalization	
<i>12~13 week</i>	Eigenvalue and Eigenvectors	
<i>13~14 week</i>	Similarity Transformation	
<i>15 week</i>	Finite Element Method	
<i>16th week</i>	Final Examination	

- Course evaluation

1. Midterm examination; 40%

2. Homework; 10%

3. Final examination; 40%

4. Attendance 10%

Note

Due to the Corona virus outbreaks, online class will be given through the semester.