PROFORMA FOR NEW COURSE

1.	Title of the Course	Linear Algebra for Engineers
2.	Course Number	MA5021
3.	Status of the Course	Elective
4.	Structure of Credits	2-0-0-2
5.	Offered To	PG
6.	New Course/Modification to	New
7.	To be Offered by	Department of Mathematics and Statistics
8.	To take effect from	July 2020
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	**Course Objective:** To introduce basic concepts of linear algebra. To gain hands-on ways of finding bases for vector spaces. To introduce linear transformations and its relations to matrices. To identify characteristic vectors under linear transformations.	
12.	**Course Content:** System of linear equations, row-reduce echelon matrices, invertible matrices, vector spaces, subspaces, linear dependence, linear independence, basis and dimension, linear transformations, linear functionals, inner product spaces, Gram-Schmidt orthogonalization, eigenvalues, eigenvectors, diagonalization of symmetric and Hermitian matrices.	
13.	**Text book(s):** 1. Kreyszig E, *Advanced Engineering Mathematics*, 10th Edition, John Wiley & Sons (2010). 2. Strang G, *Linear Algebra and Its Applications*, 4th Edition, Brooks/Cole (2005).	
14.	**Reference(s):** 1. Hoffman K and Kunze R, *Linear Algebra*, 2nd Edition, Prentice-Hall of India (2014). 2. Kumaresan S, *Linear Algebra: A Geometric Approach*, 1st Edition, Prentice Hall of India (2000). 3. Lang S, *Linear Algebra*, 3rd Edition, Springer (2004). 4. Strang G, *Introduction to Linear Algebra*, 5th Edition, Wellesley-Cambridge Press (2016).	