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FREE UNIVERSITY PEREIRA SECTION

UNDERGRADUATE PROGRAM IN ENVIRONMENTAL ENGINEERING



SUBJECT: LINEAR ALGEBRA

CODE -----

SEMESTER: **SECOND**

HOURS **WEEKLY: 4**

THEORETICAL: 4

PRACTICES: 0

PREREQUISITES: BASIC MATHEMATICS

AIM :

To present an introduction to Linear Algebra, so that the student can learn, apply and Master the tools for operating with vectors, matrices, and their linear applications.

Strengthen the mastery and learning of mathematics as a basis for preparing for Environmental Engineer.

METHODOLOGY :





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The objective in subjects related to mathematical sciences is to achieve the best preparation of the student and for this the use of teaching practices is required effective. The teacher must use various methodologies for teaching: assignments Individual and group, problem-solving and solutions, skills mathematics and other practices that achieve the best aptitude and learning of the student in the mastery of the tools that this science carries.

PROGRAM CONTENT :



1. Systems of linear equations
2. Vectors in \mathbb{R}^n and \mathbb{C}^n , special vectors.
3. Square matrices and elementary matrices
4. Vector spaces. Inner product spaces. Orthogonality
- 5 Eigenvalues and Eigenvectors. Diagonalization
6. Matrices and linear applications
7. Introduction to linear programming.

BIBLIOGRAPHY:

LIPSCHUTZ S. Linear Algebra (Schaum) 2 Ed. ISBN: 84-7615-758-4 McGraw Hill. 1992





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Perry W. Linear Algebra with Applications. ISBN: 968-422-576-8. McGraw Hill. 1990

PITA RUIZ. Linear Algebra. ISBN: 968-422-777-9. Ed. McGraw Hill. 1991

