

Important Concepts from Module 1 (pre midterm)

Do I know what are
vector spaces?

Do I know
how to compute
basis of a vector
space?

Linear
Transformations

Constrⁿ of Orthogonal
Bases

RREF?
null space?
Col^m space?
Pivots?
Rank-Nullity th.
Solving Sys. of
linear eq.

~~Learning pathways for module 2 (post mid-term)~~

Do I know how to compute
EVs & EVs of a matrix?

Do I know their algebraic
geometrical meaning?

Do I know
how to diagonalize
a matrix using
EVs? $D = P^{-1}AP$?

When is it possible to
diagonalize a matrix?

What is
spectral
decomposition
of a matrix?

$$A = QDQ^+$$

using EVs?
When is
this possible?

Learning pathways for module 3 (past mid-term)

Do I know how to solve homogeneous & non-homogeneous linear ODEs w/ constant coeff using ch. eqn ??

+
Method of undetermined coeff ??

Do I know how to deal w/ repeated roots & use the notion of generalized EV?

Do I know how to transform a single higher order ODE to a system of 1st order ODE? What about Wronskian?

- (i) Have I solved all the worksheet problems?
- (ii) Have I studied all the lecture notes and the textbook?