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Course	**Course Name**	**: Introduction to Dynamic Systems**
	Course Code	**: KM184817**
	Credit	**: 2**
	Semester	**: 8**

Description of Course	
In this course we will discuss about continuous dynamic system and discrete dynamics system.	
Learning Outcome	
PLO 2	[C3] Students are able to solve simple and practical problems by applying basic mathematical statements, methods and computations
PLO 3	[C4] Students are able to analyze simple and practical problems in at least one field of analysis, algebra, modeling, system optimizations and computing sciences

Course Learning Outcome

1. Students are able to explain and give examples of dynamic systems
2. Students are able to explain and give examples about the solution of linear dynamic system and theorem of manifestation and unity
3. Students are able to explain and give examples about behavioral analysis system
4. Students are able to explain and give examples of bifurcation analysis
5. Students are able to explain and give examples of sequence and construction of dynamic models
6. Students are able to explain the equilibrium point and perform stability analysis

Main Subject

CONTINU DYNAMIC SYSTEM

Introduction to the definition of Dynamic Systems as a dynamic mathematical model in the form of differential equations. with some examples of the development of this science. Completion of the system as a model of linear differential equations and not linear theorem of embodiment and singularity, analytical settling, completion of geometric approaches in the form of trajectories, some examples of stability analyzes showing linear system behavior around the equilibrium point and geometrically in the phase or phase photon phase.

Stability analysis of nonlinear cervical behavior around the equilibrium point, Bifurcation linearization, Introduction of bifurcation type in prey predator system, Hofp bifurcation, Supercritical bifurcation.

DISCRETE DYNAMIC SYSTEM

1. Row and model construction with some examples of function iteration, logistic growth
2. Applied to the problem of life science
3. Equilibrium Point
4. Determining Stability.

Prerequisites

Non Linear Differential Equations

Reference

1. Ferdinand Verhulst, 1985."Non Linier Differential Equations and Dynamical Systems " *Published by Epsilon Uitgaven, Utrecht*
2. John K. Hunter, 2011," Introduction to Dynamical Systems" *Department of Mathematics, University of California at Davis*

Supporting Reference