Department of Mathematics
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Course	**Course Name**	**: Non Linear Differential Equation**
	Course Code	**: KM184714**
	Credit	**: 2**
	Semester	**: 7**

Description of Course	
In this course is studied about the natural phenomena with non linear differential equation form, linearization, stability analyze methods, bifurcation analyze.	
Learning Outcome	
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
PLO 4	[C5] Students are able to work on a simple and clearly defined scientific task and explain the results, both written and verbally either on the area of pure mathematics or applied mathematics or computing sciences
Course Learning Outcome	
1. The student able to identify the natural phenomena with non linear differential equation 2. The student able to analyze the stability of non linear dynamical system with the exact method. 3. The student able to identify the bifurcation and its type. 4. The student can do as work team to analyze the non linear dynamical system	

Main Subject
First orde differential system form, linearization, stability analyze by using pole placement, Routh Hurwitz and Lyapunov method. Bifurcation analyze.
Prerequisites
Ordinary Differential Equation
Reference
1. Verhulst F., " Non Linier Differential Equation and Dynamical Systems", Springer, 2013.
Supporting Reference