



Module PMRF-ISSS139/II/2024

Chaos and Fractals

Name of the PMRF student

Joy Das Bairagya

Required background of the students taught

Mathematics of class 12

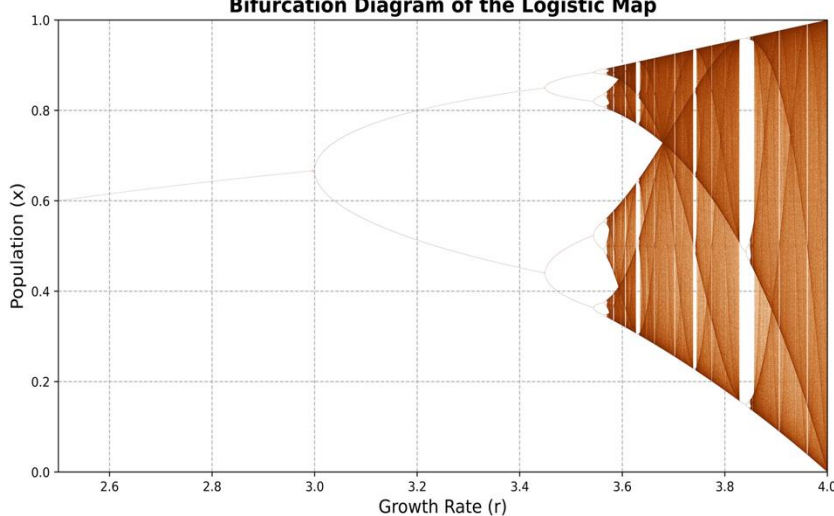
Details of the content of the module

In this course, we explore how simple deterministic equations can lead to complex and unpredictable outcomes.

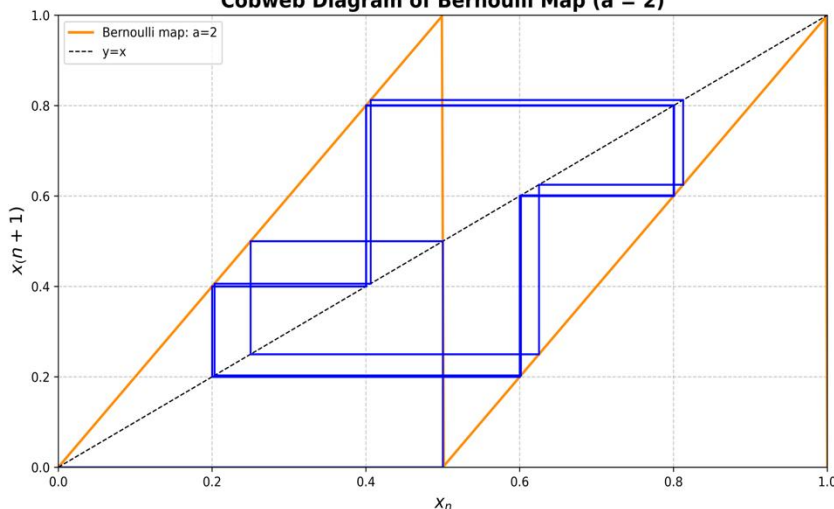
The topics covered in this course include:

1. Making Predictions
2. One-dimensional Maps
3. Sensitive Dependence
4. Ingredients of Chaos
5. Universal Behaviour of Quadratic maps
6. Fractals
7. Strange Attractors

Chaos and Fractals: Logistic Map and Bernoulli Map
Bifurcation Diagram of the Logistic Map



Cobweb Diagram of Bernoulli Map (a = 2)



Start date: 30/08/2024

End date: 29/11/2024

Days of lectures: Monday and Friday (11:00 am to 12:00 pm, on both days)

Schedule: Video lectures will be uploaded

Number of lectures: 30 days

Meeting link : Will be shared later

[Link](#)

Contact email ID: joydas@iitk.ac.in

Registration link:

<https://forms.gle/LxuLcrNa8PWq47cPA>