SF2720 Chaotic Dynamical Systems 7.5 credits

Kaotiska dynamiska system

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for SF2720 valid from Autumn 2016

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Mathematics

Specific prerequisites

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

To provide an introduction to the modern theory of dynamical systems and its applications.

Course contents

Real dynamical systems in one and several dimensions, especially iterations. Parameterdependence and chaotic behaviour (unstable dependence on initial conditions).

One of two alternatives:
1. Dynamical systems in continuous time. The Poincaré-Bendixon theorem and index theory.
2. Complex dynamics. Iterations of rational functions. Julia sets. The Mandelbrot set.

Course literature

Dynamical Systems: An introduction, by Barreira, Luis, Valls, Claudia. ISBN: 978-1-4471-4834-0

Examination

- TEN1 - Examination, 7.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.