## Module title
Dynamical Systems and Control

| Abbreviation | 10-M=VDSR-102-m01 |

### Module coordinator
Dean of Studies Mathematik (Mathematics)

### Module offered by
Institute of Mathematics

### ECTS
5

### Method of grading
Numerical grade

### Only after succ. compl. of module(s)
--

### Duration
1 semester

### Module level
Graduate

### Other prerequisites
Registration for the exercise must be made via SB@home at the beginning of the course or as announced by the lecturer in accordance with the specified registration deadlines. Certain prerequisites must be met to qualify for admission to assessment (e.g., successful completion of a certain percentage of exercises). The lecturer will inform students about the respective details at the beginning of the course. Registration for the exercise will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.

## Contents
Basics in dynamical systems and control: non-linear dynamics, stability theory, ergodic theory, Hamiltonian systems; selected advanced topics, e.g., networked dynamical systems, non-linear stability, dynamics with restricted communication, entropy of dynamical systems.

## Intended learning outcomes
The student masters the mathematical methods in the theory of dynamic systems and control, and is able to analyse their quality.

## Courses
(V + Ü (no information on SWS (weekly contact hours) and course language available)

## Method of assessment
At the beginning of the course, the lecturer will choose one of the following methods of assessment: a) written examination (60 to 90 minutes), b) oral examination of one candidate each (approx. 15 minutes), c) oral examination in groups (groups of 2, approx. 20 minutes)

Assessment offered: Assessment offered in the semester in which the course is offered and in the subsequent semester, course offered on demand or every four semesters.

Language of assessment: German, English

## Allocation of places
--

## Additional information
--

## Referred to in LPO I (examination regulations for teaching-degree programmes)
--

## Module appears in
- Master's degree (1 major) Mathematics (2012)
- Master's degree (1 major) Mathematics (2010)
- Master's degree (1 major) Economathematics (2011)
- Master's degree (1 major) Mathematical Physics (2012)
Master's degree (1 major) Computational Mathematics (2012)