

Module No.	Title of Module
10-MAT-MPDS1	<b>Dynamical Systems</b>

Recommended for	2nd semester of Int. Master Program Math. Phys.
Duration	1 Semester
Frequency	Each Summer Semester
Course types	(1) Lecture „Dynamical Systems“ (2 SWS) = 30 h in class + 120 h individual studies = 150 h (2) Seminar „Dynamical Systems“ (2 SWS) = 30 h in class + 120 h individual studies = 150 h
Workload	10 LP = 300 h
Aims	The students are able to show and apply the basic notions and methods of Dynamical Systems (Limit sets, trajectory types, invariant measures). They can solve minor problems independently or in groups and verify proofs for completeness.
Contents	One or more of the following topics: <ul style="list-style-type: none"> <li>- Hamiltonian Systems</li> <li>- Ergodic Theorems</li> <li>- Bifurcation theory of ordinary differential equation systems</li> <li>- Hyperbolic Dynamics</li> </ul> <p>Lectures and seminars will be held in English. Students' performance has to be in English as well.</p>
Prerequisites	None
Literature	B. Hasselblatt / A. Katok: Modern Theory of Dynamical Systems
Examinations	Oral exam of 25 min Oral lecture (60 min.) + written report (4 weeks).
Requirements	attendance at lecture „Dynamical Systems“ (2 SWS) participation in seminar „Dynamical Systems“ (2 SWS)