Galaxy Dynamics (MA) - Galaxy Dynamics

Degree - M.Sc. in Astrophysics (PO von 2014)

Module	**Elective Advanced Lectures: Modern Astrophysics**
Module No.	astro850

Course	**Galaxy Dynamics (MA)**
Course No.	Galaxy Dynamics

Category	**Type**	**Language**	**Teaching hours**	**CP**	**Semester**
Elective	Lecture with exercises	English	2+1	4	WT

Requirements for Participation:

Preparation: Astrophysics I (Astrophysics II recommended)

Form of Testing and Examination: Oral examination

Length of Course: 1 semester

Aims of the Course: Understanding of fundamental concepts of stellar and galaxy dynamics.

Contents of the Course: The lecture introduces to basic aspects of stellar and galaxy dynamics: Multiple stellar systems, dynamics of open and compact stellar clusters, elliptical, disk and barred spiral galaxies, gas kinematics, galaxy evolution in galaxy clusters, gravitational friction, violent relaxation, the Hubble fork, galaxy collisions and mergers, cosmological evolution of stellar systems.

Recommended Literature:

Binney and Merryfield, Galactic Astronomy (Princeton University Press)

Binney and Tremaine, Galactic Dynamics (Princeton University Press)

Carroll and Ostlie, An Introduction to Modern Astrophysics (Addison-Wesley)

Schneider, Einführung in die extragalaktische Astronomie & Kosmologie (Springer, Berlin)

Weigert and Wendker, Astronomie und Astrophysik (VCH Verlag)