

**Modules:**

astro830 **Elective Advanced Lectures**  
 astro850 **Modern Astrophysics**

**Course:****Galaxy Dynamics (MA)**

Course No.:

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

**Requirements:****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 Merrifield, 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)