Numerical Dynamics - astro854

Course	**Numerical Dynamics**
Course No.	astro854

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

Requirements for Participation:

Preparation:

Form of Testing and Examination: Requirements for the examination (written): successful work with exercises and programming tasks

Length of Course: 1 semester

Aims of the Course: The students will have to familiarize themselves with the various numerical recipes to solve the coupled 2nd-order differential equations as well as with the limitations of these methods

Contents of the Course: The two-body problem and its analytical solution. Ordered dynamics: integration of planetary motion, solar system, extra-solar planets. Collisional dynamics: integration of stellar orbits in star clusters, star-cluster evolution. Collisionless dynamics: integration of stellar orbits in galaxies, cosmological aspects

Recommended Literature:

Write-up of the class;

S. J. Aarseth; Gravitational N-body simulations: Tools and Algorithms (Cambridge University Press, 2003)

PDF version of this page.