Module: Elective Advanced Lectures: Theoretical Physics

Module No.: physics70c

Course: General Relativity for Experimentalists (T)

Course No.: physics768

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture with exercises	English	3+2	7	WT/ST

Requirements for Participation:

Preparation:
Theoretische Physik I & II, Analysis I & II

Form of Testing and Examination:
Weekly homework sets (50% required), Final exam

Length of Course:
1 semester

Aims of the Course:
The students shall learn the basics of general relativity and be able to apply it to applications such as experimental tests of GR, GPS, astrophysical objects and simple issues in cosmology.

Contents of the Course:
Review of special relativity
Curved spacetime of GR
Experimental tests of GR
GPS
Black holes
Gravitational waves
Introductory cosmology

Recommended Literature:
GRAVITY, by James Hartle
A FIRST COURSE IN GENERAL RELATIVITY, by Bernard Schutz
EXPLORING BLACK HOLES, by Taylor and Wheeler