Course Description:
This course covers the basics of general relativity and some applications. As a preparation special relativity is reviewed, in particular the concept of symmetries and the resulting conservation laws. Next, the mathematical tools for general relativity are developed: Vectors, tensors, manifolds, and metrics. Third, the Einstein equations and its immediate consequences are discussed. The last part covers some applications, which might include: cosmological models, black holes, Penrose diagrams and gravitational waves.

Prerequisites:
The course requires a basic understanding of special relativity, classical field theory (Lagrangian dynamics) and vector calculus.

Literature:

Date and Place:  
Wed, 10:15–11:45, Hörsaal, Building 61, Bahrenfeld  
Fri, 10:15–11:45, Hörsaal, Building 61, Bahrenfeld

Problem Classes:  
Fri, 12:00–13:30 / 14:15–15:45, Hörsaal, Building 61

Starting on:  
13 October 2021