

**Modules:**

physics700 **Elective Advanced Lectures**  
 physics730 **Theoretical Physics**

**Course:****Relativity and Cosmology I (T)**

Course No.:

| Category | Type                   | Language | Teaching hours | CP | Semester |
|----------|------------------------|----------|----------------|----|----------|
| Elective | Lecture with exercises | English  | 4+2            | 8  | WT       |

**Requirements:****Preparation:**

Training in theoretical physics at the B.Sc. level

**Form of Testing and Examination:**

Written or oral examination

**Length of Course:**

1 semester

**Aims of the Course:**

Introduction into Einstein's theory of general relativity and its major applications

**Contents of the Course:**

Gravity as a manifestation of geometry  
 Introduction to differential geometry  
 Einstein field equations  
 The Schwarzschild solution  
 Experimental tests  
 Gravitational waves

**Recommended Literature:**

T. Padmanabhan, Gravitation: Foundation and Frontiers  
 J. B. Hartle, Gravity: An introduction to Einstein's general relativity