Modules:

physics700 **Elective Advanced Lectures**
physics710 **Experimental Physics**
physics720 **Applied Physics**

Course: Magnetism (E/A)

Course No.:

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture	English	2	3	WT

Requirements:

Preparation:
Basic knowledge in condensed matter physics

Form of Testing and Examination:
Oral examination

Length of Course:
1 semester

Aims of the Course:
Understanding of magnetism in condensed matter systems

Contents of the Course:
The lecture introduces to the magnetism in condensed matter systems. Starting from basic concepts of the magnetic properties of free atoms it is aimed to illustrate the extremely rich field of collective magnetism that arises from the mutual interaction of an extremely large number of interacting particles.
Topics covered are
Magnetism of free atoms
Magnetism of ions in the crystal electric field
Magnetic interactions and ordering phenomena
Magnetic ground states and excitations
Itinerant magnetism
Magnetic frustration and low dimensionality
Magnetic order vs. competing ordering phenomena

Recommended Literature:
Skriptum (available during the course)
S. Blundell, Magnetism in Condensed Matter
Ashcroft/Mermin, Solid State Physics
Kittel, Festkörperphysik