Level: bachelor

Course title: Magnetism and Matter

Status: elective

ECTS: 6

Requirements: none

Learning objectives:
Introduction to the basic magnetic phenomena, magnetic materials and their application.

Learning outcomes:
Understanding the basic principles, as well as interaction of magnetic fields and material environment.

Syllabus

Theoretical instruction:
Magnets. Magnetic fields and domains. Magnetism and electron. The magnetism of the Earth. Paramagnetism. Diamagnetism. Ferromagnetism (Hysteresis). Superconducting electromagnets. Nuclear magnetism. Magnetoresistance. Magnetism and life (biomagnetism). Case study.

Practical instruction:
Computational exercises which follow the lectures. Seminar on the selected chapters in magnetism.

Weekly teaching load				Other:
Lectures: 3	Exercises: 1	Other forms of teaching:	Student research: 1	