Level: PhD

Course title: Nuclear Energy

Status: elective

ECTS: 15

Requirements: Contemporary Experimental Physics III, Nuclear Physics

Learning objectives

To introduce students to the area of nuclear energetic.

Learning outcomes

After successfully finished course, students should have the general knowledge of the theory in nuclear energetic and technology of power production. This knowledge should be sufficient to allow students to be involved in practice work in nuclear power.

Syllabus

Basic properties of nucleus, nuclear reactions. Heavy nuclei fission mechanism. Interactions of neutrons with matter. Diffusion, moderation and thermalization of neutrons.
Nuclear reactor, basic types and nuclear fuel. Dynamic and exploitation of nuclear reactor. Nuclear power station. Thermodynamic processes of nuclear power station. Radiation protection, safety and fuel storage.
Thermonuclear processes.

Weekly teaching load				Other:
Lectures: 6	Exercises:	Other forms of teaching:	Student research: 4	