Level: master

Course title: Ultrasound in medical diagnostic and therapy

Status: obligatory

ECTS: 8

Requirements: none

Learning objectives

The objective is to qualify students for understanding the application of physical laws and concepts to ultrasound diagnostic and therapy.

Learning outcomes

Students are expected to acquire knowledge and ability for individual and team scientific research work in the field of applying physical concepts to ultrasound diagnostic and therapy.

Syllabus

Theoretical instruction

Topics include:

- 1. Physical principles related to ultrasound and its interaction with tissues. These include basic terminology, the physics of waves and their interaction with different tissues of the body including amplitude, intensity, attenuation, perpendicular and oblique incidence, scattering, the range equation, transducer construction and its effect on ultrasound waves, methods of focusing and resolution, useful frequency ranges, artefacts, biological effects, and safety.
- 2. Ultrasound diagnostic techniques: A scan, B scan, M scan. 2D, 3D and 4D techniques. Doppler ultrasound measurements.
- 3. Ultrasound diagnostic in obstetrics, cardiology, neurology.

Practical instruction

Practical classes are held at the appropriate departments of the Medical Faculty.

Weekly teaching load				Other:
Lectures:	Exercises:	Other forms of	Student research: 0	
3	2	teaching:1		