

MEDICAL BIOPHYSICS II.

Second Semester

Week	Lecture (1,5 hours per week)	Laboratory (2,5 hours per week)
1	Bonds and their significance in macromolecular structure; Boltzmann distribution, examples	Coulter counter
2	Liquid crystals, membranes	Determination of skin-impedance
3	Electronic properties of condensed materials (solids, macromolecules)	X-ray diagnostics
4	Ultrasound properties, generation of ultrasound	Gamma energy determination
5	Ultrasonography, Doppler methods	Pulse generators (e.g. pacemaker, defibrillator)
6	Methods for structure examination	Ultrasound
7	Basic concepts of Thermodynamics, First law	Audiometry
8	General description of transport phenomena, Onsager's equation, examples	Isotope diagnostics
9	Diffusion; transport across membrane	Densitography (CT)
10	Resting potential and its local changes	Flow of fluids.
11	Action potential, properties, interpretation	Electrocardiography
12	General characteristics of sensory function, hearing, vision	Diffusion
13	Biophysics of muscle function	Sensory function
14	Motor proteins	Repetition