

Collective Exercises

This tasks we will do together, so it is very important to prepare theoretically and use for preparation all accessible sources. Main and most important source for you is the **Fundamentals of Biophysics and Medical Technology** (Hrazdira et al, 2012), but many information you can find at the other places (libraries, internet...).

Task I. Electromagnetic radiation an its perception.

Properties of electromagnetic radiation.

Measuring the illuminance, Luxmeter.

Eye and basic optometry (non-contact tonometer, auto ref-keratometer).

Thermoregulation of a human body.

Task II. Effects of the electric current. Property of the eye.

Electrodiagnostic, electrotherapeutic methods. Individual measuring of the ECG.

Electrical excitability. Effect of the direct and alternating currents.

Physics in physiotherapy (magnetic field, laser and others).

Task III. Advanced imaging methods.

Contact and contactless thermography. Thermocamera and thermovision.

Ultrasound – properties; diagnostic and therapeutic usage.

Doppler measuring of the velocity of the blood flow.

X-rays and CT.

MRI.

Endoscopy.