PRACTICAL SESSIONS 2017/2018 – Winter term

I. PHYSIOLOGY OF BLOOD

1st Week (11.9.-15.9.2017)
Organization of practical sessions – technical and safety instructions
Methods of blood taking in men
Measurement of hematocrit value by classical hematocrit
Measurement of hematocrit value by microhematocrit set
Hemolysis

2nd Week (18.9.-22.9.2017)

**Seminars:** Suspension stability of the blood and erythrocyte sedimentation rate. Characteristics of erythrocytes and their changes. Hemoglobin.

Measurement of erythrocyte sedimentation rate (classical and accelerated method)
The red blood cell count
Determination of the hemoglobin concentration in blood by means of spectrophotometer
Automatic evaluation of hematological parameters by hematology analyser
Calculation of MCV, MCH, MCHC

3rd Week (25.9.-29.9.2017)

**Seminars:** Blood groups and Rhesus factor; incompatibility. Mechanisms of hemostasis and hemocoagulation.

Determination of blood groups and Rh factor
Determination of coagulation time
Determination of bleeding time
Measurement of prothrombine time - Quick´s method
Recalcification time (Howell´s test)

4th Week (2.10.-6.10.2017)

**Seminars:** Erythropoiesis.
White blood cells – features and functions.

The reticulocyte count
The white blood cell count
Differential white blood cell count

**TEST:** Physiology of Blood

II. PHYSIOLOGY OF CARDIOVASCULAR SYSTEM

7th Weeks (23.10.-27.10.2017)

**Seminars:** Basic characteristics of ECG – principle, interpretation of the curve.
Function of valves, heart sounds.

Influence of external factors on cardiac cycle in fish (the effect of temperature, Stannius ligatures, electrical stimulation of the heart, the effect of changes in the ionic composition (calcium and potassium lack) on the rhythm and output of the heart (video)
Electrocardiography (ECG) - evaluation of physiological ECG curve

Seminar: Regulation of the heart rate (intracardiac, extracardiac).
Respiratory sinus arrhythmia.
Evaluation of the heart rate and pulse by palpation method
Monitoring and registration of instantaneous heart rate (systems VariaPulse and VarCor)
Evaluation of respiratory sinus arrhythmia by deep breathing test and heart rate variability
(systems VariaPulse/VarCor)
Measurement of blood velocity by ultrasound

10th Week (13.11.-17.11.2017)

Seminar: Baroreflex.
Other cardiovascular reflexes.
Oculocardiac reflex (Ashner’s reflex)
Effect of posture change on cardiovascular system - orthostatic and clinostatic reflexes
Effect of an exercise on heart rate
Effect of increased intrathoracic pressure (Valsalva’s manoeuvre) on heart rate - Flack’s test
Orthostatic test and Valsalva’s manoeuvre - evaluation by VariaPulse/VarCor systems

11th Week (20.11.-24.11.2017)

Seminar: Regulation of the blood pressure.
Measurement of blood pressure by auscultation method and other methods
Long-term monitoring of blood pressure by Holter's method
Continuous monitoring of peripheral blood pressure (computer system Finometer)
Effect of exercise on blood pressure
Blood pressure changes in "cold stress" test

12th Week (27.11.-1.12.2017)

Practical training in Simulation centre of JFM CU (Novomeskeho 7a)
Determination of the heart borderlines by percussion
Auscultation of the heart - heart sounds
Computer programs (+ computer program SimHeart) and patient simulators (heart sounds, ECG)


TEST: Physiology of Cardiovascular System

14th Week (11.12.-15.12.2017)

Seminar to selected topics from “Physiology of Blood” and “Physiology of Cardiovascular system”.


Substitution of missing credit tests and practicals