

1st week: (11-17 Sept.)

General information

2nd week: (18-24 Sept.)

Resting membrane potential and Action potential observing with METANEURON system:

- ionic theory of the action potential
- the threshold of the AP
- Rheobase and Chronaxia (stimulus strengths-duration relationship)
- refractory periods

3rd week: (25 Sept.-1. Oct.) Groups rotation

Electromyography (EMG)

- Neuromuscular studies with BIOPAC system
- Observation the recruitment of motor units during static muscle work
- Determination the fatigue time of muscle

4th week: (2-8. Oct.) 1st small written exam

Blood tests I.

Practical skills:

- Prepare and evaluate the peripheral (Qualitative) blood smear, normal percentage distribution of WBC
- Hematocrit (micro), normal value

Theoretical knowledge:

- the microscope in haematological tests
- sterilisation and disinfection
- methods of taking blood from the fingertip and vein
- using of hematocrit centrifuge
- Blood cells (Hemosurf program)

5th week: (9-15. Oct.)

I. MTO (from seminar knowledge)

I. Test

6th week: (16-22. Oct.) 2nd small written exam

Blood tests II.

Practical skills:

- determination of blood groups (AB0, Rh)
- prothrombin time
- RBC, WBC and thrombocyte count (Fischer-Germer)

Theoretical knowledge:

- International Normalized Ratio (INR)
- bleeding time (Duke and Ivy method)
- partial thromboplastin time
- thrombin time
- clotting time (Lee-White)
- anticoagulants and their mechanism of action
- Landsteiner's principle, tests before transfusion
- osmotic resistance of red blood cells
- observing reticulocytes in blood smear
- erythrocyte sedimentation rate by Westergren
- using and cleaning of melangeur pipettes
- Bürker's chamber
- Price-Jones curve

7th week: (23-29. Oct.)

1st PRACTICAL MTO: Blood tests for groups 1 and 2

On Monday practices are missed because of the holiday!

8th week: (30 Oct.-5. Nov.)

1st PRACTICAL MTO: Blood tests for group 3

The human circulatory system

Practical skills:

- peripheral pulse, characteristics of the radial pulse
- the effects of physical exercise on respiration and circulation
- blood pressure measurement
- cold pressor test
- jugular pulse
- investigation of the axon reflex flare {triple response of the skin}

Theoretical knowledges:

- requirements of the blood pressure measurement

On **Wednesday** the practices are missed because of the holiday!

9th week: (6-12. Nov.)

Examination of heart function

Experiments in the isolated rat heart preparation: (Langendorf perfusion)

- effects of drugs (adrenaline, acetylcholine, atropine)
- effects of ions (K⁺, Ca²⁺)
- effect of the temperature on the heart

10th week: (13-19. Nov.)

II. MTO (from seminar knowledge)

II. Test

11th weeks: (20-26. Nov.) 3rd small written exam

Human ECG

Practical skills:

- recording the human ECG
- draw the electrical axis of the heart

Theoretical knowledges:

- different type of ECG leads: Einthoven,Goldberger,Wilson (unipolar-bipolar; limb-chest)
- characteristics of the normal ECG

12th week: (27. Nov.-3.Dec.)

2nd Practical MTO: ECG evaluation

13th week: (4-10. Dec.) 4th small written exam

The human respiratory system

Practical skills:

- spirometry (by Biopac)
- percussion over the chest
- auscultation over the heart and lungs

Theoretical knowledge:

- respiratory volumes
- respiratory capacity
- FEV1

14th week: (11-17. Dec.)

The missed practices are repeated!

III. Test (from seminar knowledge)