

## MEDICAL PHYSIOLOGY II.

**Type of subject:** Compulsory subject

**Subject code:** AOKELT792\_2A

**Credit Points:** 10

Head of the Department: **Dr. Attila Mócsai, Full Professor**

Course Director: **Dr. Péter Várnai, Full Professor**

Tutor: **Dr. András Balla**

Prerequisite: Medical Physiology I. (subject to change by introducing the new curriculum), Microscopic Anatomy and Embryology II.

### **Aim of Medical Physiology course:**

The goal of Medical Physiology course is to give the students the understanding of the concepts and principles of medical physiology. The lectures provide the information base while the seminars and practices provide the student with an opportunity to assimilate and integrate the material. Appropriate clinical perspectives are presented throughout the course

### **Schedule of the subject:**

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#### **Lectures:**

- 1. General principles of regulation in the gastrointestinal tract. Motor functions of the gastrointestinal tract.**
- 2. Secretory functions of the gastrointestinal tract. Digestion and absorption of food.**
- 3. Endocrine regulations. The hypothalamo-adenohypophyseal system; growth hormone, somatomedins.**
- 4. Function of the adrenal cortex. Function of the thyroid gland. Energy balance, quality and quantity requirement of food.**
- 5. Hormonal regulation of intermediary metabolism.**
- 6. Calcium metabolism, bone tissue, growth. Function of the reproductive system: endocrinology of the sexual differentiation and development.**
- 7. Function of the reproductive system: male sexual function; female sexual function; endocrinology of pregnancy, parturition, and lactation.**
- 8. Introduction to neurophysiology. Physiology of nerve & glia cells.**
- 9. Sensory functions.**
- 10. Physiology of hearing and equilibrium.**
- 11. Physiology of vision.**
- 12. Motor functions.**
- 13. Integration of autonomic responses.**
- 14. Electroencephalogram (EEG); sleep phenomena. Learning and memory. Regulation of behavioural mechanisms, motivation; emotion.**

#### **Practices:**

- Studies on circulatory reactions of a virtual rat
- Circulatory and respiratory reflexes in rabbit (Demonstration, Practice)
- Smooth muscle of rabbit small intestine
- Human pulmonary function tests - Spirometry
- Measurement of cardiac output in rat
- Pulse wave in human
- Oral glucose tolerance test (OGTT)
- Human pulmonary function tests - Body plethysmography
- Electrooculography (EOG) and investigation of the vestibular system
- Spiroergometry
- Human visual physiology
- Investigation of reflexes
- Practice for lab exam. Lab exam

#### **Attendance at classes:**

The lecture hours per week are 5.5; the practice hours per week are 4.5. The attendance of a minimum of 75% of practices is necessary for the end-term signature.

#### **Absences:**

No more than three absences from practices are allowed for any reason; otherwise the semester will not be credited. There are no extra practices.

#### **Methods to assess knowledge acquisition during term time:**

The knowledge of the students is tested in a written form on a weekly base. The written short tests cover the material of lectures of the previous week.

**Requirements for signature:**

The attendance in minimum 75% of practices (including seminars) is necessary for the end-term signature. Students must write a lab report for each practice using the Practical Book. The Practical Book should be signed by the teacher not later than one week after the practice. Participation in the practices is compulsory. No more than three absences from practices are allowed for any reason; otherwise the semester will not be credited.

**Final exams**

In the examination period the students have to give final exam in the second semester.

**Requirements of the examination:**

Requirements of the final exam: material of the Medical Physiology I. and Medical Physiology II.

The final exam consists of practical, written and oral parts. The students need to bring student identity card and the laboratory report book to participate in the exam. The practical part (lab exam) takes place in the last week of the second semester. Passing the lab exam is not a prerequisite to participate on the other parts of the final exam. A failed or missed lab exam is taken into account in grading the final exam as fail (1) partial grade (a successful lab exam does not result in any grade). The written and oral part of the final exam is held on the same day. The topics of the final exam can be found in the webpage of the Department of Physiology (<http://semmelweis.hu/elettan/teaching/second-semester>). The following rules will be enforced during the exams: electronic devices must be kept in the baggage; baggage and overcoats should be placed next to the wall of the exam rooms; any form of communication is disallowed; students not complying with these rules will be disqualified immediately

**Registration for the exam:**

Registration for the exam must be recorded through the NEPTUN system.

Modification in the registration must be recorded through the NEPTUN system.

**Absences from the exams:**

Failing to certify absence or denying it cause registering "absence" = "nem jelent meg" in the lecture book and/or in the NEPTUN system.

**List of textbooks:**

**Textbook:** Koeppen-Bruce M- Stanton- Bruce A: Berne & Levy Physiology (7th edition). 2017. ISBN: 9780323393942

**Practice book:** Practices in Medical Physiology (Edited by: Péter Enyedi and Levente Kiss). 2017. ISBN: 9789633314159