

REQUIREMENTS

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| Semmelweis University, Faculty of Medicine Name of the managing institute (and any contributing institutes): Department of Physiology |
| Name of the subject: Medical Physiology II. Credit value: 10 Number of lessons per week: 10 lectures: 5,5 practices: 4,5 seminars: - Subject type: <u>compulsory course</u> elective course optional course |
| Academic year: 2022/2023 academic year, II. semester |
| Code of the course¹: AOKELT792_2A |
| Name of the course leader: Dr. Péter Várnai Contact details: Semmelweis University, Department of Physiology; phone: +36-1-459-1500/60439 Position: Full Professor Date of habilitation and reference number: 2013; reference number: 347 |
| Objectives of the subject, its place in the medical curriculum: 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. |
| Place where the subject is taught (address of the auditorium, seminar room, etc.): Semmelweis University; Department of Physiology; H-1094 Budapest, Tűzoltó u. 37-47. |
| Successful completion of the subject results in the acquisition of the following competencies: Understanding of the human physiology which is foundation of medical practice. |
| Course prerequisites: (see Curriculum, NEPTUN) |
| Number of students required for the course (minimum, maximum) and method of selecting students: There is no minimum and maximum number of students. Student selection method in case of oversubscription: - |
| How to apply for the course: Registration must be recorded through the NEPTUN system. |

Detailed curriculum: by week*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 behavioral 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

Other subjects concerning the border issues of the given subject (both compulsory and optional courses!). Possible overlaps of themes: -

Special study work required to successfully complete the course: -

Requirements for participation in classes and the possibility to make up for absences:

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. There are no extra practices and missed practices cannot be retaken. Absence from the exam must be certified at the Head of the Department or Course Director within 3 working days.

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. Missed tests cannot be repeated. The evaluation of the weekly written test will be expressed as a percentage. The average of percentages of the nine best written tests results in a five-point scale:

0-50% = 1, 51-60% = 2; 61-70% = 3, 71-80% = 4, 81-100% = 5.

This grade is taken into account in the exams.

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.

Type of the examination:

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.

Method and type of evaluation:

The theoretical exam starts at 8:45 by showing up in the selected exam place. The exam place and examiners are announced at 8:40. The students need to bring ID card and the laboratory report book to participate in the exam.

The written part consists of 30 questions and takes 45 minutes. Grading of the written part:

0-14 correct answers = 1

15-18 correct answers = 2

19-22 correct answers = 3

23-26 correct answers = 4

27-30 correct answers = 5

The oral exam starts at 9:45 and consists of two theoretical questions (I-II). At the beginning of the oral exam, two theoretical questions (I. and II.) will be drawn.

I: 1, 2, 3, 4 and 5 topics of the final exam

II: 6, 7 and 8 topics of the final exam

The topics of the final exam can be found in <http://semmelweis.hu/elettan/teaching/second-semester>.

The mathematical average of four or five partial grades (lab grade, one written exam grade, two theoretical exam grades + potentially 1 lab exam grade) gives the grade of the final exam, but a failed (1) theoretical question results in an overall failed (1) exam.

Excellent (5): 4.51 - 5.00

Good (4): 3.51 - 4.50

Satisfactory (3): 2.51 - 3.50

Pass (2): 2.00 - 2.50

Fail (1): below 2.00 or in case of failed (1) theoretical question.

Failing to certify absence causes registering "absence" = "nem jelent meg" in the NEPTUN system.

How to register for the examination?:

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

Possibilities for exam retake:

Repetition of the exam is possible at least three days after the unsuccessful trial.

Printed, electronic and online notes, textbooks, guides and literature (URL address for online material) to aid the acquisition of the material:**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.

Signature of the habilitated instructor (course leader) who announced the subject:**Signature of the Director of the Managing Institute:****Hand-in date:**

2022. 05. 15.

Opinion of the competent committee(s):**Comment of the Dean's Office:****Dean's signature:**