

Name of the module: Introduction to Medical Physiology

Number of module: 471-8-1009

BGU Credits: 4.5

ECTS credits

Academic year: 1st year Medicine

Semester: Second semesters

Hours of instruction: see schedule.

Location of instruction: Daily lectures will take place in the Deichmann Building for Health Professions. Specific classroom numbers are indicated in the schedule.

Language of instruction: Lectures will be given in Hebrew.

Cycle: B.Med.Sc.

Position: Obligatory module intended for 1st year medical students, as part of their preclinical teaching.

Field of Education: Physiology.

Responsible department: Physiology and Cell Biology

General prerequisites: None.

Grading scale: Successful passing of the exam with a score of 65 or higher.

Course Description: This module is an introduction to Human Physiology

Aims of the module: The aim of this module is to give the first year medical students an appreciation of the major principles of Human Physiology.

Objectives of the module: Each student will (1) acquire knowledge on the function of major systems in the human body, (2) develop a conceptual understanding of the basic principles of Physiology such as homeostatic mechanisms as well as the integrative multi-system response of the human body to various physiological stimuli (e.g. stress, exercise), and (3) be provided with information and vocabulary required for the first clinical exposure.

Learning outcomes of the module: On successful completion of the course, the student should be able to:

1. Describe basic Physiology concepts
2. Develop problem-solving and critical-thinking skills
3. Integrate and apply various Physiological concepts to real-life clinical problems

Attendance regulation: Attendance to the oral lectures is obligatory.

Teaching arrangement and method of instruction: Instruction in the module is based on frontal oral sessions and on supervised computer exercises.

Coordinator: Prof. Ilya Fleidervish

Contact details:

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Office hours: By appointment

Lecturers:

Prof. Ariel Tarasiuk,

Prof. Alon Friedman,

Prof. Israel Sekler,

Dr. Lior Zeller,

Dr. Doron Schwartz

Prof. Eitan Lunenfeld

Module evaluation: at the end of the semester the students will evaluate the module, in order to draw conclusions, and for the university's internal needs.

Confirmation: the syllabus was confirmed by the faculty academic advisory committee to be valid on 2012 (academic year)

Last update: 11.2015

Assessment:

Students will be assessed in the module only by passing an exam with a score of 65 or higher.

Work and assignments: Solving problems and reading the relevant text book chapters (before lecture as a preparation, and after it as a review).

Time required for individual work: in addition to attendance in class, the students are expected to do the assignments, mostly by reading the relevant textbook chapters. The estimated time required for the individual work is 52 hours, an hour per an hour of lecture.

Module Content\ schedule and outlines:

- Homeostasis: Introduction to Physiology
- Blood: Plasma, hematocrit, cell types, hematopoiesis, saturation, blood coagulation
- Musculoskeletal: Skeletal muscle structure, contraction
- Cardiovascular system: Introduction, heart as a pump, control of cardiac activity, arterial and venous compartments, regulation of circulation
- Respiratory system: Introduction, mechanics of breathing, ventilation, diffusion, pulmonary blood flow, tissue gas transfer, flow- ventilation relationship, regulation of breathing
- Kidneys: Functional morphology of the kidney, blood flow and glomerular filtration, reabsorption, secretion and excretion, functions of different nephronal regions, balance of body salts, body water balance, acid-base balance
- Gastrointestinal system: Introduction, motility, secretions and absorption in the digestive system
- Physiology of Reproduction: sperm cells, egg, fertilization
- Control of homeostasis: the autonomic nervous system
- Control of homeostasis: the central nervous and endocrine systems
- Stress and exercise
- Summary

Required reading: Vander's Human Physiology: The Mechanisms of Body Function. By Eric Widmaier, Hershel Raff and Kevin Strang. McGraw-Hill, 12th Edition, 2010

Additional literature: Every fundamental university Physiology textbook (e.g. Guyton & Hall Textbook of Medical Physiology, 2010; Berne & Levy Physiology, 2010).

*** All learning material will be available to the students on the module's website (high-learn)/ library/ electronic documents available to BGU students.**