

REQUIREMENTS

Semmelweis University, Faculty of Medicine Name of the managing institute (and any contributing institutes): Dept of Biophysics and Radiation Biology
Name of the subject: Az orvosi biofizika matematikai és fizikai alapjai in English: Mathematical and Physical Bases of Medical Biophysics in German: Grundlagen der medizinischen Biophysik Credit value: 1 Number of lessons per week: 1 lecture: 1. practical course: - seminar: Subject type: compulsory course <u>elective course</u> optional course
Academic year: 2022/23 / I
Subject code: AOVFIZ475_1A <i>(In case of a new subject, it is filled by the Dean's Office, after approval)</i>
Name of the course leader: Dr. Miklós Kellermayer His/her workplace, phone number: SE Biofizikai és Sugárbiológiai Intézet, 06-1-4591500/60200 Position: professor, head of the department Date and registration number of their habilitation: 2004 PTE ÁOK 7/2004/habil
Objectives of the subject, its place in the medical curriculum: The aim of the subject is to remedy the deficiencies in the education of mathematics and physics in secondary schools, and to provide the background knowledge necessary for the Biophysics subject.
Place where the subject is taught (address of the auditorium, seminar room, etc.): The Szent-Györgyi Albert lecture hall of the Center for Theoretical Medicine 1094 Budapest, Tűzoltó u. 37-47);
Successful completion of the subject results in the acquisition of the following competencies: Successful completion of the subject results in the acquisition of which competencies: The brief summary of secondary school physics necessary for understanding of biophysics
Course prerequisites: -
Number of students required for the course (minimum, maximum) and method of selecting students: There is no min/max limit
How to apply for the course: in the neptune system
Detailed curriculum: <i>Planned schedule of lectures:</i> 14 hours lecture in the first four weeks of the semester. 1. Mathematics, necessary for the understanding of biophysical laws 2. Physical quantities and units 3. Kinematics – motions

<p>4. Statics – changes of shape, forces, mechanical stress, pressure</p> <p>5. Dynamics – work, energy</p> <p>6. Oscillations, waves</p> <p>7. Fluid mechanics</p> <p>8. Thermodynamics</p> <p>9. Electricity – charges in rest and in motion</p> <p>10. Magnetism, magnetic induction</p>
<p>Other subjects concerning the border issues of the given subject (both compulsory and optional courses!). Possible overlaps of themes: The topics of the subject are prerequisites for understanding medical biophysics I. and II. These can be mentioned also in Medical biophysics</p> <p>Compulsory subjects: The topics of the subject are prerequisites for understanding medical biophysics I. and II. These can be mentioned also in Medical biophysics</p> <p>Mandatory optional subjects: -</p> <p>Optional subjects: -</p>
<p>Special study work required to successfully complete the course: <i>(E.g. field exercises, medical case analysis, test preparation, etc.)</i> there is no such work.</p>
<p>Requirements for participation in classes and the possibility to make up for absences: the lectures are not mandatory to participate.</p>
<p>Methods to assess knowledge acquisition during term time: test questions (optional) and homework assignments.</p>
<p>Requirements for signature: Participation on at least 75 % of lessons.</p>
<p>Type of examination: practice grade</p>
<p>Requirements of the examination: The grade is based on the result of test written on the 5th week. This test should be written by all students irrespectively of taking this elective subject. The result of test should be at least 2. This is the condition for signature in Medical biophysics 1. The elective subject helps in the preparation for this test.</p>
<p>Method and type of evaluation: A single written test at the end of the course will be the basis of evaluation.</p>
<p>How to register for the examination?: on the neptun system</p>
<p>Possibilities for exam retake: During the semester there will be two retake tests</p>
<p>Printed, electronic and online notes, textbooks, guides and literature (URL address for online material) to aid the acquisition of the material: biofiz.semmelweis.hu , or itc.semmelweis.hu Lecture notes on the homepage of the department. High school physics textbooks.</p>

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

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