האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

Physical Chemistry for Bio-Medical-Sciences Students - 69101

Last update 23-10-2023

HU Credits: *3*

Degree/Cycle: *1st degree (Bachelor)*

Responsible Department: *Chemistry*

Academic year: *0*

Semester: *2nd Semester*

Teaching Languages: *Hebrew*

Campus: *E. Safra*

Course/Module Coordinator: *Dr. Raam Uzdin*

Coordinator Email: *raam@mail.huji.ac.il*

Coordinator Office Hours: *by appointment*

Teaching Staff:
Dr. Raam Uzdin,
Mr. Ilan shumilin

Course/Module description:
The course introduces the basic laws of physical chemistry for medicical sciences students. It specifically deals with thermodynamics, chemical kinetics and spectroscopy.

Course/Module aims:
The goal of the course is to introduce physical chemistry and its applications to the medical and biological sciences.

Learning outcomes - On successful completion of this module, students should be able to:
1. Understand the energetics and kinetics that drive chemical reactions and physical changes.

2. Understand the relationship between macroscopic properties and the molecular make up of matter.

Attendance requirements(%):
None

Teaching arrangement and method of instruction: Lecture and Exercise

Course/Module Content:
Thermodynamics:

1. Introduction

2. State functions

3. The first law of thermodynamics,

4. Enthalpy and thermochemistry,

5. Entropy and the second law of thermodynamics

6. Gibbs free energy; Equilibrium constant

Kinetics
1. Rate equations
2. Reaction mechanisms

Basic terms in spectroscopy: absorbance, fluorescence, FRET

Required Reading:
None

Additional Reading Material:
Physical Chemistry for the Biological Sciences
Author(s): Gordon G. Hammes and Sharon Hammes Schiffer

Grading Scheme:
Written / Oral / Practical Exam 100 %

Additional information:
Course website - Moodle.