The Hebrew University of Jerusalem

Syllabus

General Chemistry For Medicine & Dentistry Stu. - 69134

Last update 09-10-2018

HU Credits: 4.5

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Chemistry

Academic year: 0

Semester: 1st Semester

Teaching Languages: Hebrew

Campus: E. Safra

Course/Module Coordinator: Liraz Chai

Coordinator Email: liraz.chai@mail.huji.ac.il

Coordinator Office Hours: By request

Teaching Staff:
Dr. Liraz Chai
Mr. Shay Avisar
Ms. Ella Sinai
Mr. Noam Ralbag
Mr. Gilad Nahari
Mr. Amit Fischer

Course/Module description:
The course will deal with basic concepts in Chemistry: from atoms to molecules to chemical reactions.

Course/Module aims:
A general introduction to basic concepts in chemistry that would allow to-be physicists to communicate with chemists.

Learning outcomes - On successful completion of this module, students should be able to:
1. Understand basic concepts in Chemistry.

2. Describe the atomic structure and the chemical bonding in molecules.

3. To identify and classify chemical reactions.

Attendance requirements(%):
None

Teaching arrangement and method of instruction: Lectures and Exercises

Course/Module Content:
1. Introduction, basic concepts, orders of magnitude, measuring units and units conversion.

2. Atomic structure, Periodic table of elements and its characteristics, isotopes, electronic configurations, atomic orbitals.

3. The chemical bond, Lewis structures, ionic bonding, Covalent bonding.

4. Molecules, organic molecules, functional groups, polymers.

5. Gases. Boyl's law, ideal gases, Dalton's law, real gases.

6. Stoichiometry, The mole concept, Writing and balancing chemical equations, the limiting factor, concentration in solution.

7. Chemical equilibrium, Le Chatelier principle.

8. titrations, chemical reactions in solution.

9. Oxidation reduction reactions.

10. States of matter and intermolecular forces.

Required Reading:
Please make sure to have a periodic table of the type Sargent Welch

Additional Reading Material:
General Chemistry / Hill & Pettrucci, 4 th Ed., Pearson Prentice Hall, 2005

Chemical Principles The Quest for Insight/Atkins and Jones, 4th edition, 2008

Course/Module evaluation:
End of year written/oral examination 80 %
Presentation 0 %
Participation in Tutorials 0 %
Project work 0 %
Assignments 0 %
Reports 0 %
Research project 0 %
Quizzes 20 %
Other 0 %

Additional information: