האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

ORGANIC CHEMISTRY C - 69667

Last update 17-03-2022

HU Credits: 4

Degree/Cycle: 2nd degree (Master)

Responsible Department: Chemistry

Academic year: 0

Semester: 2nd Semester

Teaching Languages: English

Campus: E. Safra

Course/Module Coordinator: Prof. Ori Gidron

Coordinator Email: ori.gidron@mail.huji.ac.il

Coordinator Office Hours: By appointment

Teaching Staff:

Prof ori gidron

Course/Module description:

The main topics are taught in the course:

1. Stereochemistry: Isometry and symmetry, chirality, classification of isomers, symmetry and NMR.
2. Pericyclic reactions and understanding their mechanisms through molecular orbitals analysis.
3. Molecular photonics: Photochemical reactions, energy and electron transfer in organic compounds, optional material.
4. Supramolecular chemistry: History, basics concepts, supramolecular interactions, optional material.
5. Organic electronics: Theory (band structure, polarons etc.), conducting polymers, devices.

Course/Module aims:

See Learning Outcomes.

Learning outcomes - On successful completion of this module, students should be able to:

Basic knowledge of concepts in supramolecular chemistry
Distinguish between different stereoisomers
Analyze the symmetry of a molecule and its influence on the nature of the molecule

Identify the mechanisms of pericyclic reactions
Basic knowledge in photochemistry

Attendance requirements(%):

None

Teaching arrangement and method of instruction: Lecture and exercise

Course/Module Content:

1. Stereochemistry: Isometry and symmetry, chirality, classification of isomers, symmetry and NMR.
2. Pericyclic reactions and understanding their mechanisms through molecular orbitals analysis.
3. Molecular photonics: Photochemical reactions, energy and electron transfer in

organic compounds, optional material.
4. Supramolecular chemistry: History, basics concepts, supramolecular interactions, optional material.
5. Organic electronics: Theory (band structure, polarons etc.), conducting polymers, devices.

Required Reading:
None

Additional Reading Material:
Core Concepts in Supramolecular Chemistry and Nanochemistry / Steed, Turner and Wallace: Online Access
Supramolecular Chemistry from Molecules to Nanomaterials / Gale and Steed: Online Access
Molecular Orbitals and Organic Chemical Reactions, Student Edition / Fleming: Online Access
Modern Physical Organic Chemistry / Anslyn and Dougherty QD 476 A57 2006 (4 copies)
Basic Organic Stereochemistry / Eliel, Wilen & Doyle: QD 481 E44 (1 copy)
Mechanism and Theory in Organic Chemistry / Lowry & Richardson: QD 476 L68 (2 copies (diff.
ed.))
Organic Reactions and Orbital Symmetry / Gilchrist & Storr: QD 476 G54 (2 copies (diff. ed.))
Frontier Orbitals and Organic Chemical Reactions / Fleming: QD 461 F53 (1 copy)

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

Additional information:
At least 5 assignments should be submitted and pass with a grade of 6 and above. The assignment grade will be calculated as the average of the highest scoring 5 passing assignments (20% of the final grade).

The course is open for students from the School of Pharmacy.
The course is delivered in English.