INSTRUCTOR INFORMATION

Instructor: Dr. Uri Samuni
Office: Remsen 26A
Office Hours: Thursday 12:00-1:00 pm and by appointment
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COURSE

Goals/Objectives: Mastery of selected modern Physical Biochemistry concepts and methods with emphasis on the properties, function and characterization of biochemicals, proteins and macromolecules.

Text: There is no one text that covers this course. The course will consist of the lectures and specific reading assignments that will be posted on Blackboard during the course.

Some recommended texts are:
2. Peter Atkins's Physical Chemistry

Blackboard I utilize Blackboard to post course material and assignments or make course announcements. Announcements will also be sent via blackboard to your email address. The students must make sure to login to blackboard and check for announcements and check their Queens College e-mail.

Grading:

Midterm (30%)
Paper analysis (20%)
Final Exam (cumulative) (45%)
Class participation and in class assignments (5%)

Bonus points: Pop Quizzes may be given at any lecture. Points will be a bonus.
COURSE SCHEDULE

Tue 2/2 Course overview and Introduction to Spectroscopy
Th 2/4 Absorption Spectroscopy
Tue 2/9 No Class - Friday schedule
Th 2/11 Absorption Spectroscopy Instrumentation and methods
Tue 2/16 Absorption Spectroscopy applications
Th 2/18 Fluorescence Spectroscopy
Tue 2/23 Fluorescence Spectroscopy
Th 2/25 FRET
Tue 3/1 Circular Dichroism Spectroscopy
Th 3/3 Infrared Spectroscopy, FTIR
Tue 3/8 Infrared Spectroscopy, FTIR
Th 3/10 Raman Spectroscopy
Tue 3/15 Resonance Raman Spectroscopy, SERS
Th 3/17 Raman Spectroscopy, Resonance Raman Spectroscopy, SERS
Tue 3/22 DLS and protein-protein interactions
Th 3/24 Biophysical and Medical literature search (tentative date)
Tue 3/29 Peptides; Buffers; Protein Structure and Conformation
Th 3/31 Midterm Exam
Tue 4/5 Protein Structure and Conformation, Protein Folding
Th 4/7 Hemoglobin: Cooperativity, Allosterism; Hill Plots, Spectroscopic applications
Tue 4/12 Hemoglobin: Cooperativity, Allosterism; Hill Plots, Spectroscopic applications

Th 4/14 ESR Spectroscopy

Tue 4/19 ESR Spectroscopy

Th 4/21 Ligand Binding, Reaction Kinetics, Enzyme Kinetics, Inhibition

Tue 4/26 No Class - Spring Recess

Th 4/28 No Class - Spring Recess

Tue 5/3 Ligand Binding, Reaction Kinetics, Enzyme Kinetics, Inhibition

Th 5/5 Ligand Binding, Reaction Kinetics, Enzyme Kinetics, Inhibition

Tue 5/10 Advanced topics

Th 5/12 Advanced topics

Tue 5/17 Advanced topics

Tu 5/24 Final exam 8:30-10:30

* schedule is tentative