CHEMISTRY 378 / BIOCHEM 770  
PHYSICAL BIOCHEMISTRY  
SPRING 2017 - SYLLABUS  

T and Th, 9:00 am - 10:50 am, Rem 105  

INSTRUCTOR INFORMATION  

Instructor: Dr. Uri Samuni  
Office: Remsen 26A  
Office Hours: Thursday 12:00-1:00 pm and by appointment  
Telephone: 718-9974223  
Email: uri.samuni@qc.cuny.edu  

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.  

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

Blackboard Material, assignments and announcements will be posted to Blackboard. Announcements will also be sent via blackboard to your email address. 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: Short Quizzes given during class will serve as bonus points.
## COURSE SCHEDULE

Tue 1/31  Course overview and Introduction to Spectroscopy  
Th 2/2  Absorption Spectroscopy  
Tue 2/7  Absorption Spectroscopy Instrumentation and methods  
Th 2/9  Absorption Spectroscopy applications  
Tue 2/14  Fluorescence Spectroscopy  
Th 2/16  Fluorescence Spectroscopy  
Tue 2/21  FRET  
Th 2/23  Circular Dichroism Spectroscopy  
Tue 2/28  Infrared Spectroscopy, FTIR  
Th 3/2  Infrared Spectroscopy, FTIR  
Tue 3/7  Raman Spectroscopy  
Th 3/9  Resonance Raman Spectroscopy, SERS  
Tue 3/14  Raman Spectroscopy, Resonance Raman Spectroscopy, SERS  
Th 3/16  DLS and protein-protein interactions  
Tue 3/21  Biophysical and Medical literature search (tentative date)  
Th 3/23  Peptides; Buffers; Protein Structure and Conformation  
Tue 3/28  Midterm Exam  
Th 3/30  Protein Structure and Conformation, Protein Folding  
Tue 4/4  Hemoglobin: Cooperativity, Allostetism; Hill Plots, Spectroscopic applications  
Th 4/6  Hemoglobin: Cooperativity, Allostetism; Hill Plots, Spectroscopic applications
Tue 4/11  spring recess
Th 4/13  spring recess
Tue 4/18  spring recess
Th 4/20  Monday schedule
Tue 4/25  EPR Spectroscopy
Th 4/27  EPR Spectroscopy
Tue 5/2  Ligand Binding, Reaction Kinetics, Enzyme Kinetics, Inhibition
Th 5/4  Ligand Binding, Reaction Kinetics, Enzyme Kinetics, Inhibition
Tue 5/9  Ligand Binding, Reaction Kinetics, Enzyme Kinetics, Inhibition
Th 5/11  Advanced topics
Tue 5/16  Advanced topics
Th 5/18  Advanced topics
Tue 5/23  Final exam 8:30-10:30

* schedule is tentative

* a trip to CUNY structural biology center and/or CUNY ASRC is planned. Class schedule will be adjusted accordingly