

BB482/582

INSTRUCTOR	Dr. Afua Nyarko 2039 Ag. Life Sci. Bldg. (ALS) (541) 737-4486; nyarkoa@oregonstate.edu															
TIME AND LOCATION	1:00 – 1:50 Monday – Wednesday – Friday ALS 2018 Office Hours: By appointment															
COURSE OBJECTIVES	Lectures and hands-on projects using a few important biophysical techniques for studying biomolecules and their interactions. Topics will cover the basic principles, and experimental design, with major emphasis on data handling and analysis. Graduate students will receive additional experience in instrumentation and data collection.															
LEARNING RESOURCES	Assigned readings and articles from the literature Principles of Physical Biochemistry, 2nd Ed.” by van Holde, Johnson, and Ho (recommended)															
PREREQUISITE	BB 490/590, BB 481/581, CH442															
LEARNER OUTCOMES	Students completing this course will be able to <ul style="list-style-type: none"> – Explain the key concepts, and experimental design considerations for six biophysical methods [circular dichroism, isothermal titration calorimetry, nuclear magnetic resonance spectroscopy, fluorescence spectroscopy, surface plasmon resonance and small angle light scattering] used to investigate biomolecular structures and interactions. – Critically evaluate and analyze primary literature using the six selected biophysical techniques. – Use the NMR visualization program SPARKY, and HSQC, CBCA(CO)NH, and HNCACB spectra to sequentially assign the HN, N, CA, and CB resonances of a 76-residue protein – Determine the secondary structure of a protein from NMR chemical shifts 															
LEARNER EXPECTATIONS	Students are expected to arrive to class on time. No cell phone usage in class. This course will require you to spend time reading assigned material(s). Students are expected to read assigned materials prior to class, and come prepared to participate in classroom discussions															
COURSE EVALUATION	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 70%;"></th> <th style="width: 15%; text-align: center;">BB482</th> <th style="width: 15%; text-align: center;">BB582</th> </tr> </thead> <tbody> <tr> <td>Midterm (Friday, February 17th)</td> <td style="text-align: center;">33 %</td> <td style="text-align: center;">25 %</td> </tr> <tr> <td>Class presentations</td> <td style="text-align: center;">33 %</td> <td style="text-align: center;">25 %</td> </tr> <tr> <td>Term project (due by noon, Monday, March 20th)</td> <td style="text-align: center;">33 %</td> <td style="text-align: center;">25 %</td> </tr> <tr> <td>Special Project (BB582 only, Week 8 presentations)</td> <td style="text-align: center;">-</td> <td style="text-align: center;">25 %</td> </tr> </tbody> </table> <p>Class presentations: Group-led discussions of assigned primary research articles Special Project (BB582 only): Work in pairs to create a short video (less than 20 minutes) on the instrumentation and data collection on <u>one</u> of these instruments - Circular dichroism spectropolarimeter, Isothermal titration calorimeter or Fluorescence spectrometer. Two groups cannot produce a video on the same instrument.</p>		BB482	BB582	Midterm (Friday, February 17 th)	33 %	25 %	Class presentations	33 %	25 %	Term project (due by noon, Monday, March 20 th)	33 %	25 %	Special Project (BB582 only, Week 8 presentations)	-	25 %
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UNIVERSITY POLICIES	<p data-bbox="431 558 1406 800"><i>“The goal of Oregon State University is to provide students with the knowledge, skill and wisdom they need to contribute to society. Our rules are formulated to guarantee each student’s freedom to learn and to protect the fundamental rights of others. People must treat each other with dignity and respect in order for scholarship to thrive. Behaviors that are disruptive to teaching and learning will not be tolerated, and will be referred to the Student Conduct Program for disciplinary action. Behaviors that create a hostile, offensive or intimidating environment based on gender, race, ethnicity, color, religion, age, disability, marital status or sexual orientation will be referred to the Affirmative Action Office.”</i></p> <p data-bbox="431 842 1421 1083">Students with documented disabilities Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at http://ds.oregonstate.edu. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.</p> <p data-bbox="431 1115 1421 1293">Expectations for student conduct The Student Conduct Code establishes community standards and procedures necessary to maintain and protect an environment conducive to learning, in keeping with the educational objectives of Oregon State University. This code is based on the assumption that all persons must treat one another with dignity and respect in order for scholarship to thrive. For the full Student Conduct Code see http://oregonstate.edu/studentconduct/</p> <p data-bbox="431 1335 1421 1514">Academic or Scholarly Dishonesty is prohibited and considered a serious violation of the Student Conduct Code. It is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another. For specifics related to offenses proscribed by the University see: http://oregonstate.edu/studentconduct/offenses-0</p> <p data-bbox="431 1556 1421 1671">Religious holiday statement Oregon State University strives to respect all religious practices. If you have religious holidays that are in conflict with any of the requirements of this class, please see me immediately so that we can make alternative arrangements</p> <p data-bbox="431 1713 1421 1770">Behaviors disruptive to the learning environment will not be tolerated and will be referred to the Office of Student Conduct for disciplinary action.</p>																