



Course Syllabus

Course title and number: Chemistry 872, Topics in Biophysics

Credits: 1

Canvas Course URL: migration in progress

Course Designations and Attributes: graduate student training in research methods and practice

Meeting Time and Location: Thursday 2:15 am, Bock Penthouse

Instructional Mode: face-to-face lectures; student oral presentations

How Credit Hours are met:

1 lecture per week; 14 weeks; total hours:	14
Reading 10 assigned papers	20
Preparing oral presentation	5
Brief written answer a question on each paper	2
Written essays on 3 topics 3x4	12
Total hours:	53

Instructor Title and Name

Professor Meyer Jackson

Instructor Availability

In addition to all lectures, office hours are unlimited; instructors are available for any student's request for a meeting.

Instructor Email/Preferred Contact Meyer.Jackson@wisc.edu

Teaching Assistant (if applicable): NA

OFFICIAL COURSE DESCRIPTION

The course covers topics of current interest in the field of Molecular Biophysics. Three topics are presented each semester, led by a different faculty member. A faculty member selects the topic, gives a lecture overview, and selects papers. Three or four meetings are then devoted to student presentations of the papers selected by the faculty member. At these meetings students turn in a small written assignment as an answer to a question about the papers distributed a few

days earlier. The faculty leader of each topic submits an overarching question on the topic and students turn in a 2 page essay on that topic after the final paper is presented.

The course emphasizes the application of rigorous design and interpretation to current research problems. In this way the students learn to apply critical analysis to cutting edge subjects in biophysics. The students prepare a presentation and go through their papers thoroughly, figure by figure, and evaluate each premise and technique. These presentations help students develop communication skills, and the course director has an opportunity to give the presenter feedback on his or her presentation after the class. The vigorous discussions, initiated by students and moderated by the faculty leader of the topic, insure that students develop a critical approach to understanding the basis and pitfalls of the subject under study. At the same time the students broaden their view of how physical ideas can be applied to biological problems.

Requisites

LEARNING OUTCOMES

Course Learning Outcomes

Graduate students only (no undergraduates enrolled)

Learn about current topics of active interest in molecular biophysics

Learn to evaluate primary research literature in molecular biophysics

Learn how to design and interpret experiments

Understand how rigorous research is conducted

Practice giving oral presentations

Gain skill in posing and answering scientific questions

There is no variable credit activity

GRADING

- Presentation
- Short answer to weekly question
- Essays on each topic

DISCUSSION SESSIONS

N/A

LABORATORY SESSIONS

N/A

REQUIRED TEXTBOOK, SOFTWARE & OTHER COURSE MATERIALS

Review articles are selected for each topic

Research articles are assigned for each weekly meeting

The presentations of the faculty leaders are made available to the students

EXAMS, QUIZZES, PAPERS & OTHER MAJOR GRADED WORK

Student oral presentations

HOMEWORK & OTHER ASSIGNMENTS

Short answers to questions on papers

Two page essays on the three topics