

# Course Syllabus

**Course title and number:** Chemistry 872, Topics in Biophysics

**Credits:** 1

**Canvas Course URL:**

**Course Designations and Attributes:** Graduate student training in presenting a seminar on a research paper, as well as training in research methods and practice

**Meeting Time and Location:** Thursday 2:25 am, Bock Penthouse

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

**How Credit Hours are met:**

1 faculty lecture or student presentation per week; 14 weeks, **14** hours: Reading 10 assigned papers **20** hours: Preparing oral presentation **5** hours. Written reports on assigned topics **12** hours: Total hours: **51**

**Instructor Title and Name**

Professors Tom Record, Alessandro Senes, Sam Butcher

**Instructor Availability**

After any class or by appointment

**Instructor Email/Preferred Contact** [mtrecord@wisc.edu](mailto:mtrecord@wisc.edu), [senes@wisc.edu](mailto:senes@wisc.edu), [sebutcher@wisc.edu](mailto:sebutcher@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. All enrolled students are expected to read each paper and participate in class discussion each week, as well as to hand in occasional written assignments on these papers.

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** Grades are based on active participation each week. For non-dissertators, grades are also based on the quality of the seminar and of the written work.

## **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**

The major out-of-class assignments are to read the assigned papers and participate in class discussion. There also are written assignments to address questions from the papers assigned in each section of the course.