

## CHEM 575: Topics in Chemical Biology

### SYLLABUS — SPRING 2020

#### Official course description

Recent research at the interface of chemistry, biology, and bioengineering. Topics include chemistry and biology of proteins and nucleic acids, proteomics, biosynthesis, protein and genome engineering, and synthetic biology. A primary goal will be to introduce undergraduates to reading primary literature.

#### Requisites

CHEM 345 and (BIOCHEM 501 or 507)

#### Time and location

TR 11:00AM to 12:15 PM, CHEM B371

#### Credit hours: 3

Two 75 min classroom meetings per week consisting of a mixture of lectures and discussions, as well as reading, problem sets, and other activities outside of the classroom.

#### Course designations

Advanced level; physical science breadth; counts as L&S credit

#### Instructional mode

Face-to-face

### LEARNING OUTCOMES

Chem 575 is intended to provide an introduction for upper-level undergraduates to the field of chemical biology. By the end of this course, students will be able to:

- Describe current areas of interest in chemical biology
- Explain common techniques used in chemical biology research
- Effectively read the primary literature and discuss it critically with peers
- Communicate the major research findings of scientific articles and their importance to the field

### INSTRUCTOR

**Instructor:** Professor Tina Wang

- **Contact:** [twang495@wisc.edu](mailto:twang495@wisc.edu)
- **Office hours:** by appointment

### GRADING

Grades in this class will be determined by a mixture of problem sets, participation in class discussion, presentation, and a final written assignment. They will be weighted as follows:

- Homework: 40%

- Participation: 25%
- Presentation: 20%
- Written assignment: 15%

### **Homework**

Will be divided into two categories: (1) three problems sets that will reinforce concepts introduced in lecture and (2) worksheets intended to guide students through reading the assigned primary literature and serve as starting points for class discussions.

### **Participation**

Attendance and participation in class discussions

- You are allowed two “free” absences from class discussions; however, you are still responsible for turning in the worksheets that accompany the discussions.

### **Presentation and written assignment**

In place of a final exam, students will select a recent paper (published in the past five years) in the area of Chemical Biology and prepare a presentation explaining the paper to the class. Students will also prepare a “Cover Letter” written assignment on their selected paper (details below).

**Cover Letter:** When one submits a manuscript for publication in a journal, one often prepares a cover letter that explains to the editor the significance of the work. For very competitive journals, such as Science and Nature, the editorial staff sends only a small fraction of manuscripts out to reviewers; most manuscripts are rejected without review. Therefore, the cover letter is especially important, as the authors must convince the journal editor that the manuscript deserves a full review. Pretend that you are the authors of the paper you have selected and that you are preparing to send the manuscript for publication. Write a one to two-page cover letter to the Editor explaining how your manuscript fits in with the field and why it is important. (Adapted from Prof. Sam Gellman)

## **ACADEMIC INTEGRITY**

By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison’s community of scholars in which everyone’s academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. <https://conduct.students.wisc.edu/academic-integrity>

## **ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES**

“The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW- Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA.”  
<http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php>

## **DIVERSITY AND INCLUSION**

### **Institutional statement on diversity**

“Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals. The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.”

<https://diversity.wisc.edu/>