

# University of Wisconsin-Eau Claire

## Chem 452: Biochemistry I - Fall 2012

### Course Syllabus

---

Chem 452 is a 3 credit course, and the first in a two semester sequence that includes Chem 454. This course is intended for, but not restricted to, Biochemistry/Molecular Biology (BMB) majors. Consequently, some topics that are typically covered in a traditional biochemistry course will not be covered in depth in the Chem 452-454 sequence, but instead are covered in other courses within the BMB program. These include laboratory techniques for isolating and characterizing biological molecules (Chem 453, Chem 455 & Biol 401), the flow of genetic information (Biol 304), bioinformatics (Chem 406 & Biol 409), and signal transduction (Biol 302). The prerequisite for Chem 452 is general chemistry up through the second semester organic chemistry course (Chem 326). This semester we will discuss the fundamental chemical, structural, and functional properties of the major classes of biological molecules, with particular focus on the proteins. We will also introduce other important biomolecules, including the carbohydrates and lipids, and will investigate how more complicated biomolecular systems, such as cell membranes, sensory systems and cellular motors operate at the molecular level. Chem 454 will subsequently focus on metabolic pathways that are used for the extraction of energy from the environment and for the degradation and synthesis of biological molecules. The discipline related outcomes for Chem 452 include:

- Applying your knowledge of general and organic chemistry to predicting the structures and interactions of biological molecules from their elemental compositions.
- Developing an understanding of how the chemical structures and physical properties of biological molecules relate to their function.
- Developing an understanding of how biological molecules interact with one another to produce complex, self-regulating systems, and how chemical energy is utilized to drive and sustain these processes.

Successful completion of Chem 452 will contribute specifically to three of the five liberal education learning goals for a baccalaureate degree from UW-Eau Claire:

- A knowledge of the natural world.
- Creative and critical thinking.
- Effective communication.

---

**Lecture:** Sect. 001 9:00am – 9:50am, Mon., Wed. and Fri. Phillips 281

**Instructor:** Warren Gallagher Phillips Hall 437 715-836-5388 [wgallagh@uwec.edu](mailto:wgallagh@uwec.edu)

Office hours Mon., Wed. and Fri. 10:00am - 11:00am. You are also welcome to stop by my office or make an appointment to meet at other times.

#### Course Materials:

Textbook *Biochemistry, 7<sup>th</sup> Edition*; Berg, Tymoczko & Stryer; W. H. Freeman & Co., 2012 (Available through textbook rental)

Course Website Point your browser to [http://www.chem.uwec.edu/Chem452\\_F12](http://www.chem.uwec.edu/Chem452_F12). Among other things, you will find copies of the syllabus, problem assignments, answer keys, and lecture overhead located at the website.

**Attendance Policy:**

Attendance to class will be noted. Excessive absences will be reported to the Office of the Dean of Students and will be considered when determining your course grade. Please email me ([wgallagh@uwec.edu](mailto:wgallagh@uwec.edu)) or leave a message on my answering machine (715-836-5388) if you plan to miss class. In the event of an absence, you are responsible for all materials covered, and for all announcements and assignments made.

- Missing an exam due to participation in a university sanctioned athletic event, or an approved field trip for another course, will be considered an excused absence. In the case of a severe illness or a family emergency that takes you away from campus, you should contact the Office of the Dean of Students (715-836-2003); they will contact your instructors to inform them of your absence. If this procedure is followed, such absences will also be considered excused. In the case of excused absences, arrangements can be made to make up missed exams and quizzes.

**Students with Disabilities:**

Any student who has a disability that requires classroom accommodations should contact both the instructor and the Services for Students with Disabilities Office, located in Old Library 2136.

**Academic Integrity:**

The official university policy on academic integrity will be followed in this class: "Any academic misconduct in this course is a serious offense, and the strongest possible academic penalties for such behavior will be pursued. The disciplinary procedures and penalties for academic misconduct are described in the UW-Eau Claire Blugold Student Conduct Code (<http://www.uwec.edu/DOS/policies/upload/BlugoldCode2012.pdf>) in the section titled. Additional information on academic misconduct can be found at the Office of the Dean of Students' website (<http://www.uwec.edu/DOS/policies/academic/index.htm>)

**Grading:**

	<b>Points</b>
3 in-class exams at 100 points each	300
In-class quizzes and hand-in assignments at 25 points each (will count the best 4)	100
Final Exam (comprehensive)	100
<b>Total</b>	<b>500</b>

- Letter grades will be assigned on a percentage basis:

90 – 100%	<b>A</b>
80 – 89%	<b>B</b>
70 – 79%	<b>C</b>
60 – 69%	<b>D</b>
< 60%	<b>F</b>

- +/- grades will be assigned at the end of the semester in borderline situations and will be based on criteria that include attendance, class participation and overall perceptible effort put into the class.