

Chem 501 - Introduction to Biochemistry

The chemistry of biological systems

Spring 2020

Online Course, Self-Paced

Prerequisites

Jr status AND C or better in Chem 341 or 345. These prerequisites are in place because the knowledge gained from these courses is vital to understanding and doing well in 501 and that knowledge is needed from the very beginning of class. The curriculum is designed in a sequential fashion in order to build on concepts and knowledge from one course to the next to provide optimal conditions for successful completion. Taking courses out of sequence or skipping required courses puts the student at a severe disadvantage and is not something this department supports. It is in your best interest to take this course only when you are fully prepared and not before.

Instructor

Kristene Surerus, Associate Professor of Chemistry and Biochemistry

Chem 845

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web site Canvas

office hours are by appointment

Text

Principles of Biochemistry by Nelson & Cox, 7th edition, 2017, W.H. Freeman and Company

Hardbound Book ISBN-13: 978-1-4641-2611-6

Loose Leaf Book or eBook are also acceptable as would be the 5th or 6th editions

At uwm.ecampus.com : \$300.03 new, \$151.53 rent, \$76.99 180 days online (prices listed 11/1/2019)

On average, students should spend 48 hours per credit per semester on class activities, so approximately 144 hours for this course. Note that this workload is an estimate only; students are assessed on their performance, not on the time put into the course.

If you will need accommodations in order to meet any of the requirements of this course, please contact me as soon as possible.

Please contact me with questions about the course – I will readily set up an appointment to meet with you face-to-face, by phone or by email. I will endeavor to respond to emails within 24 hours of receipt M-F (no guarantee that I will respond on weekends). Please put ‘Chem 501’ in the subject line and it is *recommended that you use your UWM account* to maximize the chances that I receive and can respond to your email (the UWM server does filter out accounts from some organizations but will always send through accounts from UWM). If you phone and I’m not available to answer, please leave a message on the answering machine with your name and number and I will respond as soon as possible. I do review each student’s progress at least once a week and touch base with each student by email at least biweekly. *These emails will be sent to your UWM account – please check your UWM account regularly.* While most students appreciate these routine contacts, a few prefer to initiate contact. If you prefer to opt out of receiving these routine emails, just send me an email stating you would prefer not to receive these and I will respect your wishes.

Course setup

This course is an online version of Chem 501. It will cover the same material that is covered in the face-to-face version of Chem 501. The major changes are it includes chapter quizzes in addition to the midterm exams and it is self-paced – you decide how fast you want to go through the course. A recommended schedule is provided based on typical progress in the face-to-face version. However, it is strongly recommended that you do not get too far behind the recommended schedule. There is a significant amount of material to learn and one is unlikely to be successful trying to ‘cram’ at the end of the semester. Also, Canvas typically is slower during the end of the semester due to the large quantities of users during this time. Do not wait until the last week to finish a large portion of the class, you are likely to have difficulties in accessing the site. Inability to access the site is not sufficient grounds for an incomplete. If you lose or don’t have access to your personal computer/internet link during the course, use the computer labs on campus and/or computers in the local libraries in your community.

Course material is available on the Canvas course website.

- On the Home page under Class Notes, the syllabus is posted as well as a recommended schedule, study guide and definitions. Additional notes may be added over the course of the semester as needed.
- On the Home page under Lecture Notes, there are the lecture notes for the 25 chapters that will be covered in this course. Please review the lecture notes prior to reading the relevant chapter in the textbook – it will indicate the learning objectives for the chapter and will indicate which sections are covered. Some chapters will be covered in their entirety, others will only be covered briefly.
- On the Home page under Videos of Powerpoint, there are videos of voice-over powerpoints for the 25 chapters that will be covered in this course. These review the same material covered in the Lecture Notes and are an alternative tool to learn the material.
- On the Home page under Class Notes, you will find information on the number of questions and time allotted for each quiz and exam – please review prior to taking each quiz/exam. Also you will find information on the miniquizzes – these do not count toward your final grade but are present to provide you an additional tool to learn material
 - The miniquizzes may be taken as often as you like.
 - The chapter quizzes may be taken up to THREE times, the highest score will count.
 - The midterm exams will cover ~6 chapters each and may be taken TWICE with the highest score counting in the final grade.

The quizzes and midterm exams are given on the computer and are timed (how much time you have left will be shown on the screen). ***These are to be completed without books, notes, Wikipedia, etc. and without the help of anyone.*** Using your books or notes and getting someone else to take the quiz/exam for you or help you during the quiz/exam is forbidden and are clear cases of academic dishonesty.

It is strongly encouraged that you prepare prior to taking each quiz or exam so you did not spend too much time retaking them. If you chose to retake a quiz or exam, take some time to study and review the material covered by that quiz or exam to better enable you to improve your performance. Simply taking a given quiz two or three times in a row will not improve your understanding of the material or your score. Doing well on the quizzes and midterm exams will significantly strengthen your performance on the final exam.

When taking quizzes or midterm exams, it is strongly recommended that you observe the following:

- **Use the most reliable internet connection available:** Come to a campus lab, if possible. Next in reliability are cable modem and DSL. Dial-up is not recommended.
- **Use a "hard-wired" internet connection, NOT WIRELESS.**
- **Do NOT open Canvas in more than one "tab" in your browser.**
- **SAVE each answer** as you move through the quiz.
- **WAIT a minute after hitting Submit Quiz**, before shutting down the browser or logging out of Canvas -- this allows the system to properly save your responses.

If you have a browser issue (e.g., the browser "freezes") or loses internet connectivity during the quiz or exam, you should

- shut down the browser (not submit the quiz, not log out)
- open a new browser window (For example, if Firefox freezes, the student could open Internet Explorer or Google Chrome as the alternate browser.)
- log back into Canvas
- navigate to the course and enter the quiz again
- continue taking the quiz.
- NOTE: In a timed quiz, the clock keeps ticking.

If you do experience a problem with saving answers or submitting a quiz, please report details to the UWM Help Desk at 414-229-4040 or GetTechHelp.uwm.edu. Thoroughly documenting specific cases will help expedite the resolution.

Final Exam

The final exam is a two hour timed paper test administered in person. It is cumulative and will have a similar format and questions as the chapter quizzes and midterm exams. It may be taken ONCE.

If you are in the Milwaukee area, you may schedule taking the final exam in my office on any weekday on or before May 7, 2020. The final exam needs to be scheduled between 9:00 am and 5:00 pm subject to my availability. I strongly encourage you to take the final as soon as you are ready for it. However, if you are not ready to take the final exam prior to final exam week, I will set up several slots during May 11-14, 2020. I will post the days/times the final exam will be offered as an announcement on the course home page toward the end of the semester once I have received room assignments. These will be the only times the final will be offered that week. If you elect to take the final exam during finals week, you will need to let me know in advance (by email) which one you would like to attend. I will add names to the list until capacity is reached (there is limited room for each slot). If the day/time slot you request is already at capacity, I will ask you to select another slot.

If you are unable to schedule a time that works in my schedule (I will be as accommodating as I can but other commitments prevent me being available at times) OR you are not in the Milwaukee area, you can arrange for a college instructor or a librarian elsewhere to proctor your final exam. I would need to approve of such an arrangement and have the name, email, mailing address and phone contact of that person. There is a form that needs to be filled out that includes a mailing address of the proctor for delivery of the exam so please start the process early. Most Public Libraries offer a proctoring service, although a few charge a nominal fee. Be sure to get a specific contact name rather than just the name of

the library. Proctoring arrangements require at least a 10 working day notice (all arrangements should be in place no later than May 1st). For an exam taking place in the United States, the last day the exam may be taken is May 14, 2020; for an exam taking place outside the United States, the last day the exam may be taken is May 12, 2020. These deadlines are in place to ensure that the exam can be returned in time for grading. In both cases the exam needs to be received by me no later than May 15, 2020.

For the final exam, you must present a picture ID to verify your identity. You are not permitted to use any notes or textbook and you may not use any device which can connect to the internet or which can communicate with another person. You will not need a calculator for the final exam. The final exam is cumulative and will have a format similar to the quizzes and midterm exams and may include multiple choice, true/false, matching, ordering, short answer and fill in the blank types of questions.

Grading/Due Dates

The miniquizzes do not count toward your final grade – they are exercises to assist you in developing certain skills. They may be taken as often as you like.

There are 25 chapter quizzes given on Canvas at your convenience. The chapter quizzes count for 10% of the final grade. You may take each quiz up to THREE times – the highest score will count – and *must be completed by May 7, 2020*. You will need to have earned 40% or higher on each chapter quiz to take the final exam. The better you do on the quizzes, the better you will do on the midterm exams and the final exam.

There are 4 midterm exams given on Canvas at your convenience. The midterm exams count for 30% of the final grade. You may take each midterm exam up to TWO times – the highest score will count – and *must be completed by May 7, 2020*. You will need to have earned 40% or higher on each midterm exam to take the final exam. The better you do on the midterm exams, the better you will do on the final exam.

The final exam is a 120 minute timed paper test administered in person and cannot be taken until you score at least 40% on each chapter quiz and midterm exam. It is cumulative – it covers all the material presented in this course. The final exam may be taken ONCE and *must be completed by May 14, 2020* if proctored by me, *or by May 14, 2020 (May 12, 2020 if outside US)* if proctored offsite. The final exam counts for 60% of the final grade. Taking the final exam completes the course – any quizzes or midterms attempts taken after you have taken the final exam will not count toward your grade.

Grading Scale

| | | | | | |
|-------------|----|-------------|----|-------------|----|
| 90.00-100 | A | 70.00-74.99 | B- | 50.00-54.99 | D+ |
| 85.00-89.99 | A- | 65.00-69.99 | C+ | 45.00-49.99 | D |
| 80.00-84.99 | B+ | 60.00-64.99 | C | 40.00-44.99 | D- |
| 75.00-79.99 | B | 55.00-59.99 | C- | below 40.00 | F |

There is no extra credit or make-up work available to improve the course grade.

A grade of Incomplete can only be given to a student who has carried the course successfully until near the end of the semester but, because of illness or other unusual and substantiated cause beyond the student's control, has been unable to take or complete the final test or to complete some limited amount of term work.

Course grades can be appealed by following the procedure outlined at http://www.uwm.edu/letsai/pdf/grievance_procedure.pdf.

Important Dates

| | | | |
|----------------------------|--------|-------------------------|-------|
| First Day of Classes | Jan 21 | Last Day to Drop With W | Apr 4 |
| Last Day to Add | Feb 3 | Last Day of Classes | May 7 |
| Last Day to Drop Without W | Feb 17 | | |

University Policies located online at <http://www.uwm.edu/Dept/SecU/SyllabusLinks.pdf>

Recommended Schedule

It is strongly recommended that you proceed through the chapters in the order listed below. While some chapters stand alone, many require knowledge found in other chapters. The order presented will allow you to effectively build on your knowledge. There is a lot of material so do not get too far behind this schedule or your ability to successfully complete the course will be affected.

| Week | Date | |
|------|----------|------------------------------|
| 1 | Jan 21 | Ch. 1, 2 quizzes |
| 2 | Jan 27 | Ch. 3, 4 quizzes |
| 3 | Feb 3 | Ch. 5, 6 quizzes |
| 4 | Feb 10 | midterm 1, Ch. 7 quiz |
| 5 | Feb 17 | Ch. 8, 10 quizzes |
| 6 | Feb 24 | Ch. 11, 13 quizzes |
| 7 | Mar 2 | Ch. 14 quiz, midterm 2 |
| 8 | Mar 9 | Ch. 15, 16 quizzes |
| 9 | March 23 | Ch. 17, 19 quizzes |
| 10 | March 30 | Ch. 21, 12 quizzes |
| 11 | Apr 6 | Ch. 23 quiz, midterm 3 |
| 12 | Apr 13 | Ch. 24, 25 quizzes |
| 13 | Apr 20 | Ch. 9, 26 quizzes |
| 14 | Apr 27 | Ch. 27, 28 quizzes |
| 15 | May 4 | midterm 4, prepare for final |
| 16 | May 11 | final exam week |

Study Tips

As far as preparing for a quiz, everyone learns differently - some do better by reading, some by listening, etc. Figure out what works for you and use that - flash cards can work well, reading the lecture notes/text book and taking your own notes can be effective. Some people work better in a study group - the discussion board can be utilized as a study group or to organize face-to-face study groups. Allow enough time - there is a lot of material, much of it is logical but some you just have to memorize the language.

While you may take the quizzes and midterm exams in any order that you chose, the recommended schedule of chapters does build from one section to another - for example the stereochemistry introduced in chapter 1 is revisited in chapters 3, 4, 6, 7, and 8. The functional groups reviewed in chapter 1 are important in chapters 3, 4, 5, and 6. Part of this course is integrating prior material into later material. Also, early in the course much of the material students have already been exposed to in prereq courses but as the course progresses, the information presented many students have not seen before and so it may take more time to master it.

As far as tips on quiz taking

- take the quiz in a distraction-free environment to help you focus on the quiz
- take the quiz when you are rested and fed
- read each question carefully - it is very easy to miss a key word that has a big effect on interpreting the question
- after reading the question, predict an answer before looking at the multiple choice answers - it helps to build confidence when your prediction matches
- do the easy questions first to make sure you get through the whole quiz
- save your answers as you go along

Remember, the quizzes and midterm exams are timed. Once the time limit expires, the next key stroke you do causes the quiz to be submitted. If you have saved answers prior to that, they are submitted and scored. However, any answer you have not saved as you went along, is scored as zero. Keep track of how much time you have left on a quiz/midterm.

One approach would be to read the lecture notes/textbook chapter and/or listen to the videos and once you feel comfortable with the material, take the corresponding quiz. If you do well, move on to the next chapter – it not required that you take each quiz three times. If there are questions that you didn't know how to answer or had difficulty with, then i) re-read the textbook chapter/lecture notes, focusing on that section to improve you understanding, ii) contact me – I am willing to meet with you to discuss the material or to answer questions by email if that fits your schedule better, iii) study with another student(s). After you have studied more, then take the quiz a second time. I strongly discourage taking quizzes back-to-back, as this does not lead to improved performance in the course. Once you have taken all the chapter quizzes relevant to a midterm exam, prior to taking the midterm, review all the material, retake one or more chapter quizzes to give yourself confidence and then take the midterm. If you still have quiz/midterm exam chances left at the end of the semester, these can be used to review prior to taking the final exam.

What I have found in previous semesters is that students typically do about the same on the final exam as they did on the quizzes and midterms. If you treat the quizzes and midterms as 'real' tests, studying for them and taking them without assistance, you will be very well prepared for the final. Unfortunately I do occasionally hear of reports that a student uses 'assistance' when taking the quizzes/midterms. However, these students are doing themselves a grave disservice since on the final exam, which is proctored, they cannot utilize their crutches and they do very poorly. This is the major reason why the final exam is worth so much - it is the one time I can ensure that all students are taking the test under equitable, fair conditions. I know it seems overwhelming to have the final worth so much but in reality, if you have learned the material well for each chapter and you did well on the quizzes/midterms, you will be well prepared for the final and you will do well.