



Oregon State University

Ecampus

**Course Name:** Elementary Biochemistry

**Course Number:** BB 350

**Credits:** 4 Credits

COURSE PREREQUISITE - Organic chemistry

### ***LEARNING RESOURCES***

1. Textbook: *Biochemistry Free and Easy* by Kevin Ahern and Indira Rajagopal – download at <http://biochem.science.oregonstate.edu/biochemistry-free-and-easy>. Be sure to get the correct book. There are three books at the site.

2. Most of the materials for the course are found in an external Web site. This includes video lectures, a schedule, and exam info. These are all available through the Course Materials link in the Announcements section of Canvas
3. PowerPoint images are available in the Files section of Canvas.
4. Access the course Schedule page through Canvas

**Note to prospective students:** Please check with the OSU Bookstore for up-to-date information for the term you enroll ([OSU Bookstore Website](#) or 800-595-0357). If you purchase course materials from other sources, be very careful to obtain the correct ISBN.

**COURSE POLICIES**<sup>[SEP]</sup> - Please note the date and time of the class exams. The instructor may, in the classroom class, give extra credit to students attending the lecture. This is not an option for e-campus students and they will not lose points relative to the classroom students. Reading and studying the assigned material before the lecture date is essential for success. Waiting to the last minute to study or prepare is a prescription for disaster. I expect students will meet all deadlines as appropriate for withdrawing from the class, should that be necessary. I do not routinely approve petitions to make changes after deadlines have passed, except in extraordinary circumstances. The deadline for dropping classes (no grade) during the academic year (fall, winter, spring terms) is the second week of class. The deadline for withdrawing from a class (grade of W) is the seventh week during the academic year. Summer deadlines are different and students are responsible for confirming such deadlines with the **OSU Registrar**

## ***TOPICS COVERED***

Water/Buffers

Amino Acids

Peptides/Proteins

Protein Structure

Hemoglobin

Protein Purification

Enzymes

Enzyme Controls

Membranes

Nucleic Acids

DNA Synthesis

RNA Synthesis

Protein Synthesis

Biotechnology

Viruses/Cancer/Oncogenes

Immune System

Energy

Carbohydrate Structure

Glycolysis

Carbohydrate Storage

Citric Acid Cycle

Electron Transport/Oxidative Phosphorylation

Lipid Metabolism

Photosynthesis

Nitrogen Metabolism

**GRADING**<sup>[1]</sup><sub>SEP</sub> - Course Points Distribution - Exam 1 (20%), Exam 2 (20%), Exam 3 (20%) Final Exam (40%). Students who ask questions that are answered in the syllabus will lose points. Students who ask for ways to earn extra credit will lost points. For the record, there is NO extra credit possible in this ecampus course (even though it is mentioned in the videos). I do not (and in fact cannot) take into consideration improvement during the term in assigning grades. Ecampus students are NOT at a disadvantage for not having extra credit. This is taken into consideration in the calculation of your grades. No fixed grading scale will be used to assign letter grades and no fixed numbers of letter grades are set, so grading is, therefore, by definition, curved. Grades will be assigned on groupings as determined by the instructor at the conclusion of the course. These are also shown after each exam.

If your grade is low and you wonder how to improve it, the answer is to improve your performance against the average compared to what you did previously. Since the average varies with each exam, it means you need to do your best. Because grades are assigned on a “curve,” there is no way for me to tell you “how many points” you need to get a desired grade. **Please note this.** This is only possible for grading schemes that use fixed percentages – 90% = A, 80% = B, etc.

**How to Study for This Class** - This is a frequent question asked by students. The answer is that there are no secrets. Everyone has their own way of studying. Everyone has their own approach and any approach I recommend may likely be different from what will work for you. This class isn't really any different from any other you may take. What works for you for other classes is what I recommend using here. That said, as it says in the lectures, exams are based on what I say in class. Focus your attention on what I talk about. Learn the principles of what I talk about as opposed to memorizing the “facts” of what I say. Good luck in your studies :-).

**GENERAL EXAMINATION INFO** – Exams have been taken by students from all over the world in this course, including war zones. They simply require a proctor approved by OSU’s ecampus. at the beginning of the term. Contact them at 800-667-1465 or 541-737-9204. It is required that exams be started and completed within the time windows defined on the Schedule page. No exceptions will be made for any reason, including getting the time wrong or overlooking the correct times or misunderstanding the correct times. Ecampus students are required to take exams under the guidance of an OSU Ecampus-approved proctor. The exams are multiple choice and are a different format from the classroom exams. Ecampus students are graded on a curve unique to their class – the grades of the classroom class do not affect grades for the ecampus class.

### **EXAM PROCTORING**

Proctoring of exams for this class is **REQUIRED**. Please phone 800-667-1465 or 541-737-9204 for additional information. The proctor gives exams to you under the conditions I set. Please be aware that you need to have this set up well in advance of the exam and the proctor **MUST** be approved by ecampus. The exam **MUST** be taken in the time window described on the Schedule page. There are no exceptions to this window due to incorrect scheduling or student oversight. Students should be aware that proctors’ “windows” for taking exams close before the window I give. Please be sure you have taken this into consideration in scheduling. Please note also that I have no knowledge of how to get a proctor or how to get one approved. Ecampus has all of the answers to that. The only way I can get involved about proctoring is if there is some problem with the ecampus. You are responsible for having **ALL** proctor issues settled well in advance of taking exams.

## **EXAM POLICIES**

There will be three midterm exams and one final exam given in this course. The final will be comprehensive. Preparing makeup exams requires a significant effort. Excused absences will not be given for missing exams due to airline reservations, routine illness (colds, flu, stomach aches), or other common ailments. Excused absences will almost never be given after the absence has occurred. Students therefore must notify the instructor if they encounter difficulties **BEFORE** the exam occurs. If I decide your reason for missing an exam is valid, I might allow you to take a makeup exam. The following situations are **NOT** grounds for missing an exam:

1. You misread the date of the exam on the syllabus.
2. You went to the wrong place.

It is the responsibility of each student to check that their exam has been properly graded. If errors are made, or if the student feels that more points should have been awarded for a particular question, students must write a **CLEAR** explanation stating their case. Requests for regrading must be made in writing within 3 school days after the examination is made available to the class. Failure to follow these instructions will result in automatic denial of the request. Frivolous requests involving “fishing for points” will result in loss of points.

Students are also responsible for taking no longer than the allotted time for exams - 50 minutes for midterms and 110 minutes for finals (unless otherwise noted). Running over the allotted time for exams will result in loss of one point for every minute that the allotted time is exceeded.

No notes, books, cell phones, or other devices other than a simple calculator are allowed on the midterm exams. You are allowed to use one blank sheet of paper provided by your proctor. If you are using Proctor U, they require that you use an erasable small whiteboard in place of a blank piece of paper. On the final exam **ONLY**, students are allowed to use one 5x8 inch note card with **HANDWRITTEN** notes

on it (both sides). Note cards with material from a printer are not allowed. Students in this course do not have to get the card from me.

One of the most common problems students have with deadlines for exams/problems arise from waiting to the last possible hour to take the exam within the exam window and then having a problem, such as a flat tire, catching a cold, or having a technical problem. I am generally not sympathetic to last minute problems. The best way to avoid such problems is to schedule exams earlier in the time window so that if something unexpected happens, you have plenty of time to request a fix. Further, telling me about a problem AFTER the window closes means I will be unable to do anything about it.

### **OLD EXAMS**

I get a lot of requests for practice or old exams. In my experience, students use these exams for all the wrong reasons and in all the wrong ways. A practice/old exam is useful for illustrating the format of an exam and for that purpose only. In the lecture version of this course, the exam format is a little unusual, so I provide a practice exam to show the format. You can hear me saying that in the videos. The problems students run into with practice exams is that they use them as study tools. This is a very bad mistake because it leads students to study narrowly and study patterns of information instead of the content of the material itself. Questions change, but the content does not. Thus, when exam wording changes from one exam to another and students have been learning patterns, they answer according to the pattern they learned on an old exam, not according to the information they are being asked about. Usually, when they answer according to patterns, they find they are wrong. It is one of the most common reasons students feel like professors are trying to “trick” them. While I won’t say some professors don’t have a bit of that in mind, I can say definitively that I do not. As noted on the class Schedule page, the format of exams in this ecampus course is multiple choice. This is a simple format and there is no need to illustrate it with a practice exam. Consequently, I do not provide practice exams

and by doing this, I (hope) I am doing you a favor by getting you to focus on the actual information and not on the pattern of information. I hope this is helpful to you and I wish you the best on your exams.

### **LETTERS OF REFERENCE**

I am frequently asked to write letters of reference for students from the class. Since I must know a student personally to write a letter of reference, it is almost never possible for me to do this in the ecampus, unless I know you through some other means.

### **REGISTRATION DEADLINES**

I expect students will meet all deadlines as appropriate for withdrawing from the class, should that be necessary. I do not routinely approve petitions to make changes after deadlines have passed, except in extraordinary circumstances. The deadline for dropping classes (no grade) during the academic year (fall, winter, spring terms) is the second week of class. The deadline for withdrawing from a class (grade of W) is the seventh week during the academic year. If you do not withdraw by Friday of the seventh week of the term, you will receive a grade in the course. Summer deadlines are different and students are responsible for confirming such deadlines with the OSU Registrar.

### **POLICY ON INCOMPLETES**

A grade of I is appropriate when 1) a course requirement has not been completed due to circumstances beyond the control of the student and 2) at least half of the work for the course has been completed at a level of C- or better. For medical problems that prohibited the student from fulfilling a requirement of the course, a note from a doctor is required. The request may be supplied without the note, and the request (if acceptable) will typically be granted, conditional on the note being provided later. For other circumstances, supporting evidence, such as a note from an advisor, will be helpful to the petitioner's case.

The following is a list of reasons that are **not** acceptable:

- The course proved to be more time-consuming or difficult than expected.
- Work in other courses ended up taking too much time.
- Work or travel associated with a job ended up interfering with course work.
- Time conflicts prohibited contact with the instructor or TAs during office hours,
- The student misunderstood the requirements or grading schemes of the course.
- The student wishes to avoid a low grade.
- The student wishes to retake the course at a later date

#### LEARNER EXPECTATIONS -

1. Advance preparations, including reading notes before lectures are given.

2. Avoid last minute studying.

3. Questions to answer concepts/processes that the student does not understand BEFORE it is too late.

4. Recognition that an understanding of a complex topic like biochemistry requires considerable background prior to the class, a considerable amount of information to be acquired in the class, and sufficient time and effort to put these together to master the material.

#### LEARNER OUTCOMES -

1. Acquire the technical language used to communicate biochemistry information.

2. Gain familiarity with basic biochemistry principles, including metabolic pathways, molecule names, molecular structures (where noted), enzymes, control mechanisms, and terms used to describe categories of molecules.

3. Perform analyses and basic calculations relating to solutions, energy, and catalysis and gain understanding of how they relate nutritional and physically to the human body

4. Communicate (through writing) key concepts of biochemistry.

5. Understand and apply elementary concepts of biochemistry to relevant, specific problems.

**GENERAL OSU AND DEPARTMENTAL POLICIES** Please note: “Students with documented disabilities who may need accommodations, who have any emergency medical information the instructor should know, or who need special arrangements in the event of evacuation, should make an appointment with the instructor as early as possible, no later than the first week of the term. Students whose observance of religious holidays that conflict with class responsibilities must inform the instructor at the beginning of the term. Students with disabilities seeking accommodations in the course should be registered with the Office of Services for Students with Disabilities.

The Department of Biochemistry/Biophysics follows the university policies on student conduct. These can be found at

<http://studentlife.oregonstate.edu/studentconduct/offenses-0>

Cheating or plagiarism by students is subject to the disciplinary process outlined in the Student Conduct Regulations. Students are expected to be honest and ethical in their academic work. Academic dishonesty is defined as an intentional act of deception in one of the following areas:

- cheating- use or attempted use of unauthorized materials, information or study aids
- fabrication- falsification or invention of any information
- assisting- helping another commit an act of academic dishonesty
- tampering- altering or interfering with evaluation instruments and documents
- plagiarism- representing the words or ideas of another person as one’s own.

Behaviors disruptive to the learning environment will not be tolerated and will be referred to the Office of Student Conduct for disciplinary action.

The goal of Oregon State University is to provide students with the knowledge, skill and wisdom they need to contribute to society. Our rules are formulated to guarantee each student’s freedom to learn and to

protect the fundamental rights of others. People must treat each other with dignity and respect in order for scholarship to thrive. Behaviors that are disruptive to teaching and learning will not be tolerated, and will be referred to the Student Conduct Program for disciplinary action. Behaviors that create a hostile, offensive or intimidating environment based on gender, race, ethnicity, color, religion, age, disability, marital status or sexual orientation will be referred to the Affirmative Action Office.

**Statement Regarding Students with Disabilities:** Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at <http://ds.oregonstate.edu>. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.