

**CHEM519X:001: Essentials of Biochemistry, TR 5pm-6:15pm, 3 credit hours, Fall 2017, CRN 12457**  
**The textbook/e-book REQUIRED will be as follows: (Launchpad is recommended/possibly cheaper)**  
**Biochemistry, by Berg, Tymoczko, Gatto, Stryer, 8<sup>th</sup> Edition, Pearson**  
*Instructor Information: Dr. Athena Detrick, Ph.D., Office: Bancroft 352*  
*email: sheparda@winthrop.edu, Office Hours: MWF 11am-12noon, or by appointment*

**Course Overview:** This course covers the fundamentals of biochemistry including: nomenclature of biological molecules, key reactions in anabolic and catabolic pathways, cell signaling, regulation of gene expression and interaction of biological pathways. Mechanistic explanations will be included for key reactions discussed. Chemistry/Physics/Geology Department. Prerequisite: CHEM302 with a grade of C or above, CHEM304 with a grade of C or above, 3.000 Credit hours, 3.000 Lecture hours, Graduate, Undergraduate levels.

**University-Level Competencies (ULCs) & Course Goals:** Winthrop's University-Level Competencies (ULCs) identify learning outcomes that apply across all undergraduate programs and that all Winthrop graduates attain. These capacities are essential preparation for working productively and living meaningfully in the contemporary and emerging world. The ULCs were approved by Faculty Conference in October 2010.

**Competency 1: Winthrop graduates think critically and solve problems:** Winthrop University graduates reason logically, evaluate and use evidence, and solve problems. They seek out and assess relevant information from multiple viewpoints to form well-reasoned conclusions. Winthrop graduates consider the full context and consequences of their decisions and continually reexamine their own critical thinking process, including the strengths and weaknesses of their arguments.

**Competency 2: Winthrop graduates are personally and socially responsible:** Winthrop University graduates value integrity, perceive moral dimensions, and achieve excellence. They take seriously the perspectives of others, practice ethical reasoning, and reflect on experiences. Winthrop graduates have a sense of responsibility to the broader community and contribute to the greater good.

**Competency 3: Winthrop graduates understand the interconnected nature of the world and the time in which they live:** Winthrop University graduates comprehend the historical, social, and global contexts of their disciplines and their lives. They also recognize how their chosen area of study is inextricably linked to other fields. Winthrop graduates collaborate with members of diverse academic, professional, and cultural communities as informed and engaged citizens.

**Competency 4: Winthrop graduates communicate effectively:** Winthrop University graduates communicate in a manner appropriate to the subject, occasion, and audience. They create texts – including but not limited to written, oral, and visual presentations – that convey content effectively. Mindful of their voice and the impact of their communication, Winthrop graduates successfully express and exchange ideas.

**Grading & Requirements:** Please feel free to speak with me at anytime regarding your grade. I will gladly help you devise a strategy for getting the best grade you possibly can. I want you to be successful and enjoy this class.

**Grading Breakdown (1000 points total):**

Attendance/Participation	100 points
Discussion Lead	100 points
Journal Article	100 points
Writing Assignment	100 points
Quizzes	200 points
Midterm	200 points
Final Exam (not cumulative)	200 points

**The grading scale of 1000 points is converted to a percentage-based grade as follows:**

<b>A</b>	93-100% = A 90-92% = A-	<b>Designates work of superior quality.</b> Class participation is voluntary, frequent, relevant, and reflects that you have both read and thought about the science. Written work is clear, well-organized and thought-provoking, and free of grammatical or mechanical errors.
<b>B</b>	87-89% = B+ 83-86% = B 80-82% = B-	<b>Designates work of high quality.</b> Class participation is voluntary, frequent, and reflects that you are keeping up with the assigned materials. Written work reflects a good understanding of the biochemical concepts. Writing is clear with minimal errors.
<b>C</b>	77-79% = C+ 73-76% = C 70-72% = C-	<b>Designates work that meets the course requirements.</b> Class participation is occasional and/or rarely voluntary, with comments that reveal only a superficial grasp of biochemistry. Written work may contain arguments that are confusing, with minimal evidence of organization. Writing contains errors.
<b>D</b>	67-69% = D+ 63-66% = D 60-62% = D-	<b>Reflects minimal clarity and comprehension.</b> Class participation is minimal, never voluntary, and reveals that you have either have not read the assigned materials or did not look it up on your own. Written work is confusing, contradictory, repetitive, and/or not supported by credible sources. Writing contains errors.
<b>F</b>	0-59% = F	<b>Unsatisfactory performance</b> along most (or all) measures.

**Attendance:** Students are expected to attend classes and should understand that they are responsible for the academic consequences of absence. The student is responsible for all requirements of the course regardless of absences. Attendance is required! Absences and tardiness beyond 3 may result in up to a full letter-grade reduction of the course grade, above and beyond the direct effects of problematic attendance on measured performance and class participation; excessive absences will result in a grade of N or F per University policy (see the University Catalog). **Five or more absences will result in a failing grade for the course. Use your “sick days” wisely. You are considered tardy once the class time starts. Being 15 minutes or more late will result in an absence. Two tardies will equal an absence.** Anytime you give me an excuse, I will refer you to the Dean of Students Office to give them documentation and their office will send an absence notification.” Miranda L. Knight, Assistant Dean of Students, Winthrop University, Dean of Students Office, 246 DiGiorgio Campus Center, Rock Hill, SC 29733, 803/323-4503(W), 803/323-4514 (FAX), knightm@winthrop.edu, www.winthrop.edu

**Participation:**

Throughout the course, I will assess your level of preparation for the class and your contributions to our learning environment. Some assessment will be formal, but much of it will be based on my opinion of your preparation and contributions. Some of my assessments may include (but, of course, are not limited to):

- Can you answer questions about the current readings and tie it together with previous readings in the class? Did you critically read the material?
- Do you arrive at class on time, each class period, with a positive, open attitude?
- Attendance is the foundation of doing well in class. Tardiness or missing 5 or more class periods will result in an automatic F.

**Discussion Lead:** Once per semester, a student will be asked to lead the discussion for part of the class period. Dates/subject matter are listed at the end of the syllabus, *e.g. Alexandria Boyd will present the Discussion Lead next Tuesday*. One calendar week prior to the discussion, the student must submit a general outline of the discussion to the instructor for feedback. This should include:

- A list of possible questions to be asked of the class
- A description of how the conversation will be spurred (demonstration, pure dialogue, debate, etc.)
- An action plan for what to do if the conversation stalls
- Any activities that you may use with the class. If you need copies, I will make them for you.

**Journal Article:** Bring in a scientific paper/journal and discuss what the article is about, your thoughts/opinions on the subject matter and what your critical thinking skills have deduced after reading your chosen paper/journal. I think you will find that the scientific method can be utilized to help you think critically about your career goals and how it relates to achieving them. **All papers, both the journal article and the write-up must be turned in on/before the beginning of class on the due date.** Be prepared to report your findings in front of the class. Papers must be written in appropriate MLA format and must be cited properly. The write-up will be written as follows: 1-3 pages, 12 point font, Times New Roman, answering five questions and in this order: 1) What is the purpose of this paper/why was it written? 2) What is the background information upon which the hypothesis/study/paper was made? In other words, what is the current knowledge of the topic? 3) What were the materials and methods of the experiments used to validate the study/studies? 4) What were the results of the paper/study? 5) What was the conclusion of the paper, your opinion of the strengths/weaknesses of the paper and does it spark any ideas for future research using the scientific method? Be prepared to give the class a 3-5 minute presentation on the paper/journal article and ask 1-2 questions to test the audience's comprehension/raise awareness/opinion/stimulate discussion. Late journal article presentation grades will be deducted at the rate of 10% per class day. You may, optionally, turn the assignment in early, give your presentation early, and/or turn-in a rough draft early for me to edit, prior to turning your final submission. Sample journal articles are available for you to utilize on Blackboard or you may go to ScienceDirect.com, enter your major and "Biology", *i.e.* History Biology. Alternatively, go to: Winthrop.edu, click on "Academics", click on "Dacus Library", click on the yellow "databases" tab, click on the letter "S" from the alphabet, click on "ScienceDirect", enter your subject area of interest and biology into the keywords search box, *e.g.* "Early Childhood Education Biology" Our university has paid for full-text pdf subscriptions for many prestigious journals. I hope you are able to find a fun and interesting article to relate to biology. See end of syllabus for schedule, *e.g.* *Beau Broussard will present the first Journal Article, Tuesday 8/29.*

**Writing Assignment:** Choose a biology related topic which you would have an interest in when you graduate. The purpose will be to encourage you to apply the basic knowledge you have learned in class to your desired career. This assignment should also make you more aware of the current and real life issues that involve biology. In your paper, answer the five Winthrop Natural Science General Education Objectives below, and in that order:

1. What are some of the fundamental concepts from the life sciences?
2. What are the strengths and limitations of the biology topic?
3. What is the history of the scientific discovery?
4. What are the social and ethical contexts within the biology topic?
5. What is the application of scientific knowledge to the world-at-large and non-scientific disciplines?

The paper must have: your name, a title, body of text 4-5 pages, double spaced, 12 point font, Times New Roman. References must be listed on a **separate** last page. Papers must be written in appropriate MLA format and must be cited properly. **You must turn in a hard copy AND submit a copy to turnitin.com by/before the beginning of class on the due date.** No technology excuses will be tolerated. This course (and many other courses on campus, *e.g.* HMXP) use a web-based service called [turnitin.com](http://turnitin.com). This service helps guard against improperly using another's work. You must register with Turnitin.com. Your log-in is: Class ID = 15848586 and Enrollment Key = biochem519 Late paper grades will result in a 1 letter grade per day drop. You may, optionally, turn the assignment in early, give your presentation early, and/or turn-in a rough draft early for me to edit, prior to turning your final submission. You may take the paper to the Writing Center for additional help. Documentation attached to your paper will result in 5 extra points on your paper. They are amazing!

**Plagiarism:** If any part of your papers is plagiarized, you will receive a grade of zero on that assignment, you may be referred to the Dean of Students Office, and it may also result in an automatic F in the class. Information regarding the correct use of borrowed information is available in your (required) Rules for Writers or Prentice Hall Reference Guide and may also be found at [www2.winthrop.edu/wcenter/handoutsandlinks/dontplag.htm](http://www2.winthrop.edu/wcenter/handoutsandlinks/dontplag.htm). Please don't hesitate to ask if you have questions about appropriate referencing or paraphrasing.

**Make-Ups:** There will be no make-ups/late assignments accepted, with the exception of an email notification from the Dean of Students Office or an email from you, if you are represented by the Office of Accessibility, that details a plan of action of how you intend to make up missed work.

**Final Examinations** The form of the final examination is determined by the instructor. The exam period may not exceed two and one half hours. The times of final examinations are officially scheduled by the Master Schedule Coordinator. Legitimate exam conflicts are defined as follows: more than one scheduled exam per period; more than two examinations scheduled per day; or more than three examinations scheduled in any four consecutive periods. A student with a legitimate conflict should work directly with his/her instructor to resolve the conflict. It is the student's responsibility to initiate the resolution of any conflicts. Personal conflicts such as travel plans and work schedules do not warrant a change in examination times.

**Syllabus Change Policy:** This syllabus may be revised from time to time throughout the academic semester, which will be announced via class instruction and/or an e-mail to the enrolled students in the course.

**Email Policy:** It is my expectation that you check your university email at least once per day, though I suggest twice. I will communicate with you through email.

**Electronics Policy:** Cell phones and other unapproved electronics (IPads, tablets, laptops, etc) are not allowed in my class, unless you are given specific instruction that you may use them. Turn your phone to silent before class starts and do not take it out until dismissal. If I see you with your cell phone, you will be counted absent for the day (which means any in class work will not count).

**Student Conduct Policies:**

Students are expected to cultivate personal and academic integrity. Academic misconduct will be addressed in accordance with the Student Conduct Code and the University Undergraduate Catalog. Above all, The Student Conduct Code must be followed in all classes. You may find a copy at <http://www.winthrop.edu/uploadedFiles/studentconduct/StudentHandbook.pdf> In my class, an environment where students feel safe to be themselves, to discuss their honest and educated opinion and to be listened to is important. Actions and words that do not allow this will not be tolerated.

**Students with Disabilities/Need of Accommodations for Access:** Winthrop University is committed to providing access to education. If you have a condition that may adversely impact your ability to access academics and/or campus life, and you require specific accommodations to complete this course, contact the Office of Accessibility (OA) at 803-323-3290, or, [accessibility@winthrop.edu](mailto:accessibility@winthrop.edu). Please inform me as early as possible, once you have your official notice of accommodations from the Office of Accessibility.

Date	COURSE SCHEDULE	Discussion Lead; Journal Article Presenters, respectively:
T 8/22	Ch. 1	
R 8/24	Ch. 1	
T 8/29	Ch. 2	Alexandria Boyd; Beau Broussard
R 8/31	Ch. 3	Brooke Ellison; Alisha Jefferies
T 9/5	Ch. 4	Mackenzie Mitchell; Anneke van Eldik
R 9/7	Ch. 5	Shakayla Wells (Discussion Lead)

T 9/12	Lecture topic Ch. 6 and Quiz on Chapter 1	
R 9/14	Lecture topic Ch. 7 and Quiz on Chapter 2	
T 9/19	Lecture topic Ch. 8 and Quiz on Chapter 3	
R 9/21	Ch. 9 and Quiz on Chapter 4	
T 9/26	Review	
R 9/28	Midterm Exam (Covers Chapters 1-9)	
T 10/3	Ch. 10	Beau Broussard; Alexandria Boyd
R 10/5	Ch. 10	Alisha Jefferies; Brooke Ellison
T 10/10	Ch. 11	Anneke van Eldik; Mackenzie Mitchell
R 10/12	Ch. 11	Shakayla Wells (Journal Article)
T 10/17	No Class, Fall Break	
R 10/19	Ch. 12 and Quiz on Chapter 4	
T 10/24	Ch. 13 and Quiz on Chapter 5	
R 10/26	Ch. 13 and Quiz on Chapter 6	
T 10/31	Ch. 14 and Quiz on Chapter 7	
R 11/2	Ch 14 and Quiz on Chapter 8	
T 11/7	Ch 15 and Quiz on Chapter 9	
R 11/9	Ch 15 and Quiz on Chapter 10	
T 11/14	Ch 16	
R 11/16	Ch 16	
T 11/21	<b>Ch 17, Writing Assignment Due (hard copy and turnitin.com)</b>	
R 11/23	Thanksgiving Break, No Class	
T 11/28	Ch 18	
R 11/30	Ch 18 and Review	
T 12/5	Study Day, No Class	
Sa 12/9	Final Exam 11:30am (Covers Chapters 10-18)	Good Luck and Thank You!