

Course Title/Number	<b>Intermediate Biochemistry / CHM 567, Section 201</b>
Semester/Year	Spring 2018
Days/Time/Location	MWF 12:00–12:50 PM, Science Hall 465
Instructor	Derrick R. J. Kolling
Office	2217 WAEC; Research lab: 2208 WAEC; L.A. Session room: Science Hall 460
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E-Mail	<a href="mailto:kolling@marshall.edu">kolling@marshall.edu</a>
Office Hours	Monday 2–4 P.M. (WAEC2217), Tuesday 12–2 P.M (L.A. Session room). If you cannot attend the scheduled times, email or call me to set up an appointment. Expect to wait at least 24 hours before responses to emails.
University Policies	By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to <a href="http://www.marshall.edu/academic-affairs">www.marshall.edu/academic-affairs</a> and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to <a href="http://www.marshall.edu/academic-affairs/policies/">www.marshall.edu/academic-affairs/policies/</a> . Academic Dishonesty/Excused Absence Policy for Undergraduates/Computing Services Acceptable Use/Inclement Weather/Dead Week/Students with Disabilities/Academic Forgiveness/Academic Probation and Suspension/Academic Rights and Responsibilities of Students/Affirmative Action/Sexual Harassment

### Course Description

An intermediate level discussion of the biochemistry of mammalian cells. Includes an extension of theories and applications of the principles of energetics, dynamics and structure. Intended primarily for science majors and pre-professional students. 3 credit hours. (PR: CHM 365)

### Required Texts, Additional Reading, and Other Materials

1. ***Fundamentals of Biochemistry, Fourth Edition*** by Voet, Voet, and Pratt; McGraw-Hill, 2013.
2. Non-programmable scientific calculator for tests and exams (must not have text storage or alphanumeric data input capabilities—in general, this means no ‘function’ keys or keypads with the complete alphabet)
3. #2 pencil and black or blue ink pen for tests

<b>Course student learning outcomes</b>	<b>How students will practice each outcome in this course</b>	<b>How student achievement of each outcome will be assessed in this course</b>
Students will understand and apply core concepts in biochemistry to modern scientific problems.	<ul style="list-style-type: none"> <li>• in-class exercises</li> <li>• Homework problems</li> </ul>	<ul style="list-style-type: none"> <li>• exams</li> <li>• in-class discussion</li> </ul>
Students will have the ability to judge whether a proposed or hypothetical reaction is consistent within the general framework of catabolic and/or anabolic metabolism.	<ul style="list-style-type: none"> <li>• in-class exercises</li> <li>• Homework problems</li> </ul>	<ul style="list-style-type: none"> <li>• exams</li> <li>• in-class discussion</li> </ul>
Students will recognize how common foodstuffs are turned into metabolic energy and will be able to predict the energy yields of catabolic processes.	<ul style="list-style-type: none"> <li>• in-class exercises</li> <li>• Homework problems</li> </ul>	<ul style="list-style-type: none"> <li>• exams</li> <li>• in-class discussion</li> </ul>
Students will be able to explain the three-cornered central paradigm of biochemistry: replication/transcription/translation.	<ul style="list-style-type: none"> <li>• in-class exercises</li> <li>• Homework problems</li> </ul>	<ul style="list-style-type: none"> <li>• exams</li> <li>• in-class discussion</li> </ul>

### **Grading Policy**

tests (4 during the semester)	800	points
final exam	200	points
	<b>1000</b>	<b>TOTAL POINTS</b>
<b>Grading Scale:</b>		
900-1000 points	A	
800-899 points	B	
700-799 points	C	
600-699 points	D	
000-599 points	F	

### Attendance Policy

Attendance is mandatory for tests and exams. Make-up tests and exams will be granted only in cases that are recognized by the University through an excused absence (via the Dean of Student Affairs). Students should contact the instructor as soon as they are able to return to classes; students are required to make up missed test/exams as soon their doctor approves for them to return to campus. If class is cancelled unexpectedly, scheduled tests will be given during the next class meeting.

### Tentative Course Schedule

Week of:	Chapter	Topic
1/8	Review; 15	Review; Glucose Catabolism
1/15	No class on 1/15; 16	Glycogen Metabolism and Gluconeogenesis
1/22	17	Citric Acid Cycle
1/29	Exam I on 1/29; 18	e <sup>-</sup> Transport and Oxidative Phosphorylation
2/5	19	Photosynthesis!
2/12	20	Lipid Metabolism
2/19	Exam II on 2/19; 21	Amino Acid Metabolism
2/26	22	Mammalian Fuel Metabolism
3/5	23	Gene Expression and Replication
3/12	Exam III on 3/12; 24	Nucleic Acid Structure
	3/17 is last day to withdraw from full-semester courses	
3/19	no class (Spring Break)	
3/26	25	DNA Replication, Repair, and Recombination
4/2	26	Transcription and RNA Processing
4/9	Exam IV on 4/9; 27	Protein Synthesis
4/16	28	Regulation of Gene Expression
4/23	Snow day make-ups; Exam V on 4/27	