

SYLLABUS
INTRODUCTORY BIOCHEMISTRY
BCMB/BIOL/CHEM 3100
Fall Semester 2010

10:10-11:00 AM, Mon. Wed. & Fri, Room C127 - Life Sciences
Breakout Session: 5:00-5:50 PM, Tues. Room C127 – Life Sciences

INSTRUCTORS: Professor Daniel DerVartanian
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COURSE TEXT: Principles of Biochemistry, Fourth Edition, Horton, H.R., Moran, L.A., Scrimgeour, K.G., Perry, M.D., Rawn, J.D. (2006) Pearson Prentice Hall, Pearson Education, Inc., Upper Saddle River, NJ

HONORS OPTION: This course is an honors option course. To receive honors, a 10-15 page research report is required. The application for Honors through the Honors office must be completed by Sept. 7 (or earlier if required by Honors Department) and an email confirmation of your application **MUST** be sent to Dr. Mohnen by Sept. 10. Other deadlines include: Oct. 5 (copy of Xeroxed primary paper due); meeting with Dr. Mohnen at end of breakout session to OK paper research selection Oct. 26; Outline DUE Nov. 16; PAPER DUE Dec. 7. Each student must give an oral presentation of their Honors paper at CCRC before Dec. 7. See the website or instructors for further information. The paper is due by 5:00 P.M. Dec 7. No exceptions.

CLASS NOTES: Most material discussed in the first part of the course is in the text. Partial class notes for the 1st half of the course will be available on the website. Mandatory class notes for the 2nd half of the course are available **ONLY** at the Biosciences Learning Center, Room 406 Biosciences Building at a cost of \$12 (Bulldog Bucks). Representative old exams from Dr. DerVartanian can be found at the Biosciences Learning Center, Room 406, Biosciences Building.

WEBSITE: The class syllabus, homework, and other information is available at <http://www.ccrc.uga.edu/~dmohnen/bcmb3100/list.html>

GRADING: Grades will be based on four exams (25% each). An unexcused absence at an exam will be counted as a grade of zero for that exam. If an emergency arises, the instructor must be informed prior to the start of the exam. Quizzes and homework assignments will be periodically given during the semester, and discussed during the breakout sessions. You are **STRONGLY** advised to complete all homework assignments, as this enhances your understanding of the material and will prepare you for the exams. **All students are encouraged to form study groups consisting of four people.** Some homework will include participation in study groups.

OFFICE HOURS: We very much want to help you in your goal to learn biochemistry. We will be available at the breakout sessions and you are encouraged to use this time if you have questions or need additional help. Dr. Mohnen's office hours are on Tuesday morning from 8:30-10:00 am at the CCRC, Room 2044.

EXAMS: A 50 minute exam will be given three times during the semester and during the final examination period. Each exam will primarily cover the material discussed since the prior exam, although you may be tested on basic concepts on any exam. There will be no make-up exams. In the case of severe illness or family emergency, you must inform the instructor prior to the exam. In addition, presentation of a signed letter from your doctor, etc., will be required. In that case, you will be excused from the exam, and your grade will be based on the other 3 exams. An unexcused absence will result in a grade of zero. An absence will be counted as unexcused if the instructor is not notified before the exam is given.

**INTRODUCTORY BIOCHEMISTRY
BCMB/BIOL 3100**

Fall Semester 2010

Approximate timing of course topics

Aug. 16- Chap. 1, Chap. 2
Aug. 18 - Chap. 2
Aug. 20 - Chap. 3

Aug. 23 - Chap. 3
Aug. 25 - Chap. 4
Aug. 27 - Chap. 4

Aug. 30 - Chap. 5
Sept. 1 - Chap. 5
Sept. 3 - Chap. 6

Sept. 6 - Labor Day - *No Class*
Sept. 8 - Chap. 6
Sept. 10 - Chap. 7

Sept. 13 - EXAM 1
Sept. 15 - Chap. 7
Sept. 17 - Chap. 8

Sept. 20 - Chap. 8
Sept. 22 - Chap. 9
Sept. 24 - Chap. 9

Sept. 27 - Chap. 19 (DerVartanian)
Sept. 29 - Chap. 19
Oct. 1 - Chap. 20

Oct. 4 - Chap. 20
Oct. 6 – EXAM 2
Oct. 8 - Chap. 21

Oct. 11 - Chap. 21
Oct. 13 - Chap. 21
Oct. 15 - Chap. 22

Oct. 18 - Chap. 22
Oct. 20 –Chap. 10 **DerVartanian's Class Notes**
Oct. 22 - Chap. 11

Oct. 25 Chap. 11
Oct. 27 - Chap. 12
Oct. 29- Fall Break – *No Class*

Nov. 1 - Chap. 12
Nov. 3 - Chap. 13
Nov. 5 - EXAM 3

Nov. 8 - Chap. 13
Nov. 10 - Chap. 14
Nov. 12 - Chap. 14

Nov. 15 - Chap. 15
Nov. 17 - Chap. 15
Nov. 19 - Chap. 16

Nov. 22 - Thanksgiving holiday - *No Class*
Nov. 24 - Thanksgiving holiday - *No Class*
Nov. 26 - Thanksgiving holiday - *No Class*

Nov. 29 - Chap. 16
Dec. 1 - Chap. 17
Dec. 3 - Chap. 17

Dec. 6 - Chap. 18
Dec. 7 - Chap. 18 (*Friday class Schedule in effect*)

Friday Dec. 10- EXAM 4 – 8:00-11:00 am

BCMB 3100 Course syllabus

Chapter Number and Title (required reading**)

- **1 & 2. Introduction to biochemistry / Water
- **3. Amino acids and primary structure of proteins
- **4. Proteins: 3D structure and function
- **5. Properties of enzymes
- **6. Mechanism of enzymes
- **7. Coenzymes & vitamins
- **8. Carbohydrates
- **9. Lipids & membranes
- **19. Nucleic Acids
- **20. DNA replication & repair
- **21. Transcription RNA processing
- **22. Protein synthesis
- 23. Recombinant DNA Technology (*supplemental reading*)

The following material is covered in DerVartanian's class notes which are available from the Biology Learning Center, room 406, Biosciences Building.

(Be sure to obtain Dr. DerVartanian's class notes from the Biology Learning Center prior to Oct. 19.)

- 10. Introduction to metabolism (*supplemental reading*)
- 11. Glycolysis (*supplemental reading*)
- 12. Gluconeogenesis, The Pentose Phosphate Pathway, Glycogen Metabolism (*supplemental reading*)
- 13. Citric acid cycle (*supplemental reading*)
- 14. Electron transport and ATP Synthesis (*supplemental reading*)
- 15. Photosynthesis (*supplemental reading*)
- 16. Lipid catabolism (*supplemental reading*)
- 17. Amino acid catabolism (*supplemental reading*)
- 18. Nitrogen Metabolism (*supplemental reading*)

All academic work must meet the standards contained in "A Culture of Honesty." Students are responsible for informing themselves about those standards before performing any academic work. The policy can be found at http://www.uga.edu/honesty/ahpd/culture_honesty.htm.

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

WELCOME To Introductory Biochemistry (BCMB3100/BIOLCHEM 3100)!!

Hints for how to succeed in BCMB 3100 (from Debra Mohnen, August 2010)

BCMB3100 is a demanding, information-rich course that will serve as the foundation for your upper level biology-related courses. To succeed in Introductory Biochemistry you need to **work at the material EVERY day**. You can not cram for this course. With a measured learning pace you will enjoy the course and learn a great deal. If you procrastinate and cram you will be stressed, unhappy, and probably not perform well.

Based on previous student comments **IT IS HIGHLY RECOMMENDED THAT EVERY STUDENT GET TOGETHER WITH FOUR OTHER STUDENTS IN THE COURSE TO FORM A STUDY GROUP. The study groups are encouraged to meet at least once a week.** *Use the study groups to your advantage!!* We learn best by repeated exposure to ideas and concepts. The best way to identify what you do, or do not, understand is to try to teach it to someone else. The study groups give you this opportunity.

Other Hints

- **Read all the assigned material at least three times.**
 - 1st: before lecture skim-read to overview chapter organization, content and new concepts
 - 2nd: read in detail
 - 3rd: read to summarize main concepts
- **Read the assigned chapters before lecture!**
- **Do the recommended homework. Practice enhances performance.**
- **Bring your text to lecture to avoid excessive writing**
- The publisher of your text has a useful website (<http://www.prenhall.com/horton>). Use the website to help you learn the material. Be sure to take the tests at the website to get an indication of whether you are effectively learning the material. An additional website (www.etipsforAgrades.com) is also available from the publisher.
- **Meet with your study group at least once per week**
- If you need help, please see me at the end of the Breakout Session
- **Keep up!!!!**
- **Attend class!!!!!!**
- A so-called “self-quiz” may be given in class. Use the self-quiz as a tool to measure how well you are learning the material.
- Bring a calculator to all exams