Syllabus for Chem 3511, Survey of Biochemistry, Fall 2015

Schedule: Tues & Thurs 9:35-10:55 a.m., Boggs B6A
Instructor: Donald F. Doyle, Ph.D., EBB 5009, donald.doyle@chemistry.gatech.edu
TAs: Vincent Peterson, vpeterson6@gatech.edu ; Marietou Paye
emails: Messages to the course instructors and/or TAs **must** begin with the nine character sequence "Chem 3511" in the subject line, followed by your own description of the subject. The required nine characters includes the space character. Any deviation from this format results in the message being lost *at your fault*.
Office hours: To be determined (or by appointment).
Prerequisites: Organic Chemistry (Chem 1315, Chem 2312, or equivalent).
Text: Voet, Voet & Pratt, "*Fundamentals of Biochemistry, **4th Edition***", John Wiley & Sons, Inc., © 2013; and optionally "*Student Companion to accompany Fundamentals of Biochemistry*" 4th ed., by Uzman, Johnson, Eichberg, Widger, Voet, Voet, and Pratt. Published by John Wiley & Sons, Inc., © 2012.

Course web site: T-square.

Honor Code: Each student must sign their exam, quiz, or homework stating that they conform to the Georgia Institute of Technology Student Code of Conduct, see: http://honor.gatech.edu/content/2/the-honor-code.
Discussion of homework problems is acceptable, even encouraged, but answers to problems should be filled out individually. Answers identical to other students or solutions manuals are not acceptable and will be reported to the Office of Student Integrity.
Using the words of another as one's own is plagiarism. Plagiarism is not acceptable in this course and constitutes a violation of the Georgia Tech Honor Code.

Approximate syllabus (subject to change)

Exams: Three midterm exams (effectively 100 points each) plus the cumulative final exam (effectively 150 points). Calculators without internet access are allowed (i.e. no cell phones) and may not be shared.
Failure to attend an exam earns an automatic grade of "0" for the exam. If a student can provide satisfactory written documentation for an absence during the exam period (e.g. doctor note due to a sudden illness, death in the family, note from the Dean of Student's Office, etc.) then one exam may be prorated. **No makeup exams will be given.** For the final exam a tentative grade of "incomplete" may be assigned until an appropriate time to complete the Final Examination is coordinated. The instructor will decide what written documentation is satisfactory.

Quizzes: will be administered at the beginning of class and last about 15 minutes. Content is comprehensive. The lowest quiz score will be dropped from the grade average. Quizzes excused in advance will be made up or prorated at the discretion of the instructor.

Homework: will be assigned on T-Square. You are to print it, fill it in, and turn in the hardcopy at the beginning of class (generally one week later). Electronic submission is not accepted unless otherwise specified. No late homework will be accepted. Homework must be stapled. Unstapled homework will not be accepted. Illegible writing may result in loss of points.

Grades: 90.0-100% = A, 80.0-89.9% = B, 70.0-79.9% = C, 60-69.9% = D, <60% = F. These may be curved downward slightly, depending on class averages.
For Pass/Fail: Pass = A, B, or C, Fail = D or F.

Grading: your course grade will be determined from:
{Exam I + Exam II + Exam III + quiz average + homework average + (1.5 X Final Exam)} / 6 * 100
Grades will be posted on T-square. The final course grade will not be calculated using T-square, but will be posted on T-square.

Final Exam: Thursday Dec. 10, 8:00-10:50 a.m. in Boggs B6A. Conflict period: Saturday Dec. 12, 9:00-11:50 a.m.

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CHEM 3511 – Fall 2015 Schedule (approximate)

Week #	Day	Date	Assignment	Chapter	Subject
1	T	Aug 18		1,2	Syllabus, Chemical Basis of Life, Aqueous Chemistry
	Th	Aug 20	Homework #1	3	buffers, HH eqn, thermodynamics Nucleotides, Nucleic Acids, and Genetic Info
2	T	Aug 25		3	Nucleotides, Nucleic Acids, and Genetic Info
	Th	Aug 27	Quiz #1 Homework #2	4, 5, 6	Amino acids Protein Structure
3	T	Sep 1		6, 7	Protein Structure Protein Function
	Th	Sep 3	Quiz #2 Homework #3	7	Protein Function
4	T	Sep 8		11	How Enzymes Work
	Th	Sep 10	Quiz #3	12	Enzyme Kinetics and Inhibition
5	T	Sep 15	EXAM 1		
	Th	Sep 17	Homework #4	13	Biochemical Signaling
6	T	Sep 22		8	Carbohydrates
	Th	Sep 24	Quiz #4 Homework #5	9	Lipids and Membranes
7	T	Sep 29		10	Membrane Transport
	Th	Oct 1	Quiz #5 Homework #6	14 15	Overview of Metabolism & Free Energy Glucose catabolism/glycolysis
8	T	Oct 6		15	Glucose catabolism/glycolysis
	Th	Oct 8	Quiz #6 Homework #7	16 17	Glycogen & Gluconeogenesis Citric Acid Cycle
9	T	Oct 13	Fall break		
	Th	Oct 15		17	Citric Acid Cycle
10	T	Oct 20	EXAM 2		
	Th	Oct 22	Homework #8	18	e^- transport & Oxidative Phosphorylation
11	T	Oct 27		20	Lipid Metabolism- Fatty Acid Oxidation
	Th	Oct 29	Quiz #7 Homework #9	21	Amino acid / Nitrogen Metabolism Transamination and the Urea Cycle
12	T	Nov 3		24	Nucleic Acid Structure- DNA Supercoiling, the nucleosome, transcription factors
	Th	Nov 5	Quiz #8 Homework #10	25	DNA replication, repair, recombination
13	T	Nov 10		26	Transcription and RNA processing
	Th	Nov 12		26, 27	Transcription and RNA processing Protein synthesis- the genetic code, tRNA & tRNA synthetases
14	T	Nov 17	EXAM 3		
	Th	Nov 19	Homework #11	27	Protein synthesis- Ribosomes, Translation
15	T	Nov 24	Quiz #9	28	Regulation of Gene Expression
	Th	Nov 26	Thanksgiving		
16	T	Dec 1			Case Studies
	Th	Dec 3			Selected Contemporary Topics & Controversies

Final Examination: Thursday December 10, 2015 from 8:00 a.m. – 11:55 a.m. (Boggs B6A)