CHEM 6502: Biochemistry II – Fall

Tuesdays and Thursdays 9:35 am – 10:55 am
MoSE 1222
Course website available on T-Square: http://t-square.gatech.edu/portal

<table>
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<tr>
<th>Week of</th>
<th>Topic:</th>
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<td>Aug 22</td>
<td>Introduction to metabolism and bioenergetics</td>
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| Aug 29   | **Quiz (Aug 30)**
Biochemical Signalling | 13       |
| Sept 5   | **Sept 6: Homework #1 Due**
Glucose metabolism | 15, 16   |
| Sept 12  | **Sept 13: Homework #2 Due**
Glucose metabolism | 15, 16   |
| Sept 19  | **Sept 20: Homework #3 Due**
Integration and regulation
Citric acid cycle | 22, 17   |
|          | **Sept 22: Exam I**          |          |
| Sept 30  | Citric acid cycle
Electron transport and oxidative phosphorylation | 17, 18   |
| Oct 3    | **Oct 4: Homework #4 Due**
Electron transport and oxidative phosphorylation
Photosynthesis | 18, 19   |
| Oct 10   | **Oct 11: Homework #5 Due**
Photosynthesis
Lipid metabolism | 19, 20   |
| Oct 17   | **Oct 18: Fall Break**       |          |
| Oct 20   | **Oct 20: Homework #6 Due**
Lipid metabolism | 20       |
| Oct 24   | **Oct 25: Exam II**          | 20       |
| Oct 31   | **Nov 1: Homework #7 Due**
Lipid metabolism
Amino acid metabolism | 20, 21   |
Nov 7  **November 8: Homework #8 Due**  
Amino acid metabolism  

Nov 14  **Nov 15: Exam III**  
Nucleic acid metabolism  

Nov 21  **Nov 22: Homework #9 Due**  
Nucleic acid metabolism  
**November 24: Thanksgiving**

Nov 28  **Nov 29: Homework #10 Due**  
DNA replication and repair, transcription, and translation  

Dec 5  **Dec 6: Homework #11 Due**  
Special Topics (TBA)  

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**Final Exam:** Tuesday, December 13; 8 am – 10:50 am

**Grading:**
- **Midterm Exams (300 pts; 100 pts each)**
- **Final Exam (200 pts):** The final will be comprehensive for the course.
- **Quiz (50 pts)**
- **Homework (110 pts; 10 pts each):** Each homework assignment is worth 10 points. Three of the questions from each assignment will be chosen at random to be graded in detail. One point will be taken off automatically for each unanswered problem in addition to any other points subtracted from the graded questions. Homework is due at the start (i.e. 9:35 am) of the class period indicated. To be considered for full credit, assignments must be turned in at that time.
- **Extra Credit (up to 5 pts):** Due by 5 pm on Friday, December 9, but may be turned in any time during the semester prior to that. Find in the popular culture – from music, TV series, movies – a portrayal of a metabolic disorder that directly relates to the topics discussed this semester. Write up a paragraph that: (1) includes the title of the song, TV show (and episode), or movie; (2) includes the name of the metabolic disorder; (3) discuss whether or not that disease state was accurately portrayed.

There will most likely be a curve for the final grade based upon the overall class average, but the following are **guaranteed minimum cutoffs:**
- Greater than 90% = A
- Greater than 80% = B
- Greater than 70% = C
- Greater than 60% = D

**TA Office Hours:**
- **Po-Yu Fang:** Tuesdays, 4-5 pm. Buzz IBB wing 3-A and he will direct you to a work area along the IBB main stairs.

**Optional Discussion Session:** Fridays, 2 pm, location: MoSE 1222.

Additional readings may be assigned and those will be posted on T-square.

Recommended Texts:
It is recommended that you have access to an Organic Chemistry and a General Chemistry textbook.

Also on reserve in the library is T. Bugg’s “Introduction to Enzyme and Coenzyme Chemistry”. This is a very nice text that describes the chemistry of enzymes, grouped according to the cofactor/coenzyme and type of chemistry.

Missed Exams: There is no scheduled makeup exam. Planned absences for exam dates that coincide with an Institute Approved activity must be cleared with Prof. Kelly no later than three weeks prior to the date of the exam. In addition to the verbal request, the approval must be requested in an email message. No exceptions. (see http://www.deanofstudents.gatech.edu for information on Institute Approved Activities.)

Calculators for Exams: You are responsible for ensuring that you have an appropriate calculator for the exams. Only simple calculators are permitted – i.e. no programmable or graphing functions are permitted.

Background: You should have an understanding of the functional groups of organic and biochemical compounds, and the fundamental reaction mechanisms common in organic chemistry. You should be able to draw a reaction mechanism using double-headed curved arrows to demonstrate the flow of electrons. You should be able to draw the structure of each natural amino acid, nucleotide, common lipids and common carbohydrates (such as glucose) (it is assumed that you are already familiar with these bio-molecules). It is highly recommended that you read Chapters 11 and 12 to refresh your knowledge of the fundamentals of enzyme catalysis and kinetics.

Re-grade requests: Requests must be made in writing and handed to Prof. Kelly in person. Requests should not be made to a TA. The re-grade request must be turned in no later than the Friday of the week in which the exam is returned (by 5 pm). No exceptions. In all cases, the entire exam is subject to reassessment, not just the item in question.

E-mail rules: E-mail can only be accepted from Georgia Tech accounts. When sending an e-mail, put the following information in the subject line: Chem 4512, firstname lastname, subject.

Example: Chem 4512, Gertrude Elion, Purine Metabolism

The e-mail must be composed in a professional manner. Use proper salutations, complete sentences and avoid text-message style abbreviations.

Laptops and Cell Phones: As a courtesy for those sitting around you, these items are not permitted for use during class. Turn these items off prior to the start of each session.

Please refer to the Georgia Institute of Technology’s academic honor code: www.honor.gatech.edu, which you are required to uphold. Academic dishonesty will NOT be tolerated.