Syllabus
Biochemistry I (CHEM 351) – Fall 2012

Lecture: Tuesday and Thursday, 10:50-12:05, Lightsey Conference Center 346

Instructor: Dr. Marcello Forconi
302 SSM Building, 202 Calhoun Street
Phone: 843-953-3616
Email: forconim@cofc.edu

Office Hours: Wednesday, 9:30-10:30; Thursday, 3:25-4:25 (Room 302 SSMB)
You are STRONGLY ENCOURAGED to discuss your questions and doubts with me. If you are unable to visit my office during office hours, we should be able to schedule an appointment at an alternative time.

Course’s website: This syllabus, lecture slides, and other selected material will be available on the OAKS website for this course.

Papers from the literature will be provided when needed through the course’s website.

Suggested additional book for enzyme kinetics:
Should you decide to investigate this topic more deeply, there are two almost equivalent books by Alan Fersht: “Structure and mechanism in protein science: a guide to enzyme catalysis and protein folding” and “Enzyme structure and mechanism”. These books are available from the Addlestone library.

Prerequisite: CHEM 232 and 232L

Course Objectives:

• Compare and contrast structure and function of biological molecules
• Recognize and evaluate principles of biological catalysis
• Appraise kinetic and thermodynamic data
• Employ chemical and thermodynamic principles to explain biological interactions
### (Tentative) Course Sequence:

<table>
<thead>
<tr>
<th>Date</th>
<th>Chapter</th>
<th>Topic</th>
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<tbody>
<tr>
<td>8/21</td>
<td>-</td>
<td>Intro lecture</td>
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<tr>
<td>8/23, 28</td>
<td>2</td>
<td>Water and buffers</td>
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<tr>
<td>8/30; 9/4</td>
<td>3</td>
<td>Amino acids, peptides, and proteins</td>
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<tr>
<td>9/6, 11</td>
<td>4</td>
<td>The three-dimensional structure of proteins</td>
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<td>9/13</td>
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<td>TEST # 1 (chapters 2, 3, 4)</td>
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<td>9/18, 20</td>
<td>5</td>
<td>Proteins function</td>
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<td>9/25, 27; 10/2</td>
<td>6</td>
<td>Enzymes</td>
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<td>10/4</td>
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<td>TEST # 2 (chapters 5, 6)</td>
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<td>10/9, 11</td>
<td>7</td>
<td>Carbohydrates and glycobiology</td>
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<td>10/16, 18, 23</td>
<td>8</td>
<td>Nucleotides and nucleic acids</td>
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<td>10/25, 30</td>
<td>9</td>
<td>DNA-based information technology</td>
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<td>TEST # 3 (chapters 7, 8, 9)</td>
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<td>11/8, 13</td>
<td>10</td>
<td>Lipids</td>
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<td>11/15, 20</td>
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<td>Biological membranes and transport</td>
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<td>11/27</td>
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<td>TEST # 4 (chapters 10, 11)</td>
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<td>11/29</td>
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<td>REVIEW SESSION</td>
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<td>12/8</td>
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<td>FINAL EXAM 8-11 am</td>
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**No classes on November 6 (Election Day) and November 23 (Thanksgiving)**

Remember, this is not the final schedule. Please refer to announcements during the lectures for the exact dates of the tests.

It is possible that there will be no class on October 2nd. In that case, we will still have three lectures on enzymes, two on carbohydrates and glycobiology, but only two on nucleotides and nucleic acids. If so, test # 2 will take place on October 11.

**Tests:** There will be four tests. Most likely, the dates will be:

- September 13, covering Chapters 2, 3, and 4;
- October 4, covering Chapters 5 and 6;
- November 1, covering Chapters 7, 8, and 9;
- November 27, covering Chapters 10 and 11.

**Homework:** There will be four homework assignments. *Homework assignments are due the day before the test at 5 pm.* Late homework will be penalized. The maximum
grade you can receive on homework that is handed in late is the lowest score of the assignments that were passed in on time. You are allowed to discuss the homework with one another, but you are to write out the answers/calculations in your own words. Identically worded assignments are an indication of cheating (see below). Answers to the homework will be posted on the course’s website.

**Final Exam:** Saturday December 8, 8-11 LCC 346.

**Withdraw Date:** September 19th.

**Grading:**
- Each test, 120 points (480 points total)
- Each homework, 65 points (260 points total)
- Final Exam, 260 points

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**Attendance:** Attendance at lectures is usually proportional to your grade. I will try to post on the internet Power Point slides for each lecture prior to the actual lecture. Slides for a particular lecture will be posted on the course’s website by the end of the day that lecture was taught. In any case, your learning process will be facilitated if you read the book chapter (and skim through the slides if available) before the actual lecture. Some of the material covered in this course cannot be found in your book, but will be provided electronically or accessible on the Internet via a CofC account. You are responsible for obtaining the material and assignments.
The exact date of the tests will be announced in advance; the schedule above is **not** definitive. Attendance at exams is mandatory; however, in extreme instances (such as major medical problems or sudden family situations) there can be make-up exams. Please talk to me should such instances arise. Generally, no more than one justified absence will be tolerated.

**Academic Dishonesty:**
Lying, cheating, attempted cheating, and plagiarism are violations of our Honor Code that, when identified, are investigated. Each incident will be examined to determine the degree of deception involved.

Incidents where the instructor determines the student’s actions are related more to a misunderstanding will handled by the instructor. A written intervention designed to help prevent the student from repeating the error will be given to the student. The intervention, submitted by form and signed both by the instructor and the student, will be forwarded to the Dean of Students and placed in the student’s file.

Cases of suspected academic dishonesty will be reported directly by the instructor and/or others having knowledge of the incident to the Dean of Students. A student found responsible by the Honor Board for academic dishonesty will receive a XF in the course, indicating failure of the course due to academic dishonesty. This grade will appear on the student’s transcript for two years after which the student may petition for the X to be expunged. The student may also be placed on disciplinary probation, suspended (temporary removal) or expelled (permanent removal) from the College by the Honor Board.

Students should be aware that unauthorized collaboration--working together without permission-- is a form of cheating. Unless the instructor specifies that students can work together on an assignment, quiz and/or test, no collaboration during the completion of the assignment is permitted. Other forms of cheating include possessing or using an unauthorized study aid (which could include accessing information via a cell phone or computer), copying from others’ exams, fabricating data, and giving unauthorized assistance.

Research conducted and/or papers written for other classes cannot be used in whole or in part for any assignment in this class without obtaining prior permission from the instructor.
Students can find the complete Honor Code and all related processes in the Student Handbook at [http://studentaffairs.cofc.edu/honor-system/studenthandbook/index.php](http://studentaffairs.cofc.edu/honor-system/studenthandbook/index.php)

**Disabilities:** If there is a student in this class who has a documented disability and has been approved to receive accommodations though SNAP Services, please feel free to come and discuss this with me during my office hours.

**Other possible issues:** Please talk to me if you need to discuss a change in an exam time and/or date because of your religious observances. Similarly, please talk to me if you are involved in a sport team and you have a scheduled event on one of the exam dates.