**Chemistry 524: Biochemistry II**

**Spring 2012**

**TR 8:00-9:15 Sims 113B**

***Faculty Contact Information:***

**Instructor:** Dr. Takita F. Sumter **Email:** sumtert@winthrop.edu **Phone: (803)** 323-4991

**Office:** Sims 302C **Office Hours:** TR 9:30-10:45; 12:30-2:30pm (also by appointment or blackboard livechat)

***Course Overview:***

**Course Objectives:** This course is designed to provide a survey of the chemistry and metabolism that occurs in living systems. Topics will include integration and regulation of carbohydrate metabolism, lipid metabolism, and nitrogen metabolism and will reinforce and apply essential concepts from CHEM 523.

**Student Learning Outcomes:** Successful students in CHEM 524 will understand the structural and macromolecular aspects of biochemistry as it relates to biological systems. In addition, students will refine their critical thinking and study skills in efforts to apply the material learned in this course to solve problems encountered by practicing biochemists. To this end, students will 1) understand the role of chemistry in the function of living systems, 2)appreciate the processes that govern synthesis and breakdown of the major macromolecules, 3) understand the kinetic and energetic transformations associated with biochemical processes, and 4) be able to evaluate, critically analyze, and make logical inferences from biochemical data published in primary literature.

**Required Text:** *Biochemistry* by Voet and Voet, 4th edition.

Electronic text available at <http://www.coursesmart.com/IR/1113365/9780470570951>

***Course Requirements:***

**Class Preparation:** This is a rigorous upper level course and you should expect to spend at least 9 hours per week preparing for class. The most reasonable way to spend your time is to **pre-read the chapter before class so that you will be able to actively engage in lecture discussions and take good notes.** After the lecture, it is wise to review material covered while it is fresh in your memory and complete relevant homework problems at the end of the chapter. Your questions are welcomed, so feel free to use the beginning of class (or office hours) as a time to clarify any material from the previous lecture that you did not understand.

**Quizzes:** Quizzes will often cover the single most important topic of the previous lecture. The questions will be directly related to the assigned reading and homework problems. The lowest quiz grade of the semester will be dropped. **No makeup quizzes will be given.**

**Blackboard Course Announcements:** This course incorporates Blackboard to supplement class meetings. All announcements, lecture handouts, out-of-class assignments, and other information will be posted on Blackboard. Your (non-urgent) questions about this course and its content can be asked in the ***Discussion Board*** section of Blackboard. I will check this periodically and post responses.

**Exams:** There will be three exams worth 150 points each. The tentative dates for these exams are outlined on the syllabus. These exams are designed to test your ability to apply concepts covered to solve real biochemical problems. **Makeup exams will not be given. Students who miss an exam will have that grade replaced by 33% of their final exam grade.** The comprehensive final exam worth 250 points will cover all topics from CHEM 524. You must pass the final exam in order to pass the course. The final will be given on Thursday**, April 26th at 8:00 am.**

**Report/Oral Presentation (YFMP):**  Your favorite metabolic pathway (YFMP) project provides an opportunity for students to clearly identify an area of interest to them and conduct a thorough investigation of the topic. Students will submit a written report and present an oral presentation of current research related to their FMP. Details of the assignment will be posted on the course website.

**Additional Course Requirements for Graduate Credit:**  Students receiving graduate credit (both non-degree seeking and those working toward a degree) will be required to complete a 5-7 page paper on a controversial topic related to biochemistry. A proposal describing the topic, its relevance to this course, and the controversy must be submitted by Thursday, March 1, 2012. This paper must cite at least 10 primary literature sources and must be submitted by Thursday, April 19, 2012. A 20 minute oral presentation of your paper will be presented to the class. The paper and presentation are each worth 50 points to give the course total for graduate students 1100. Graduate students should also be aware that Winthrop’s +/- grading system is not applicable to courses taken for graduate credit. Grades will be assigned as follows: 93%-100% A; 85%-92% B, 76%-84% C, 59%-75% D, 58% or below F.

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| **YFMP Project** | **200 pts.** |
| **Exams (3 x 150)** | **450 pts.** |
| **Final Exam** | **250 pts.** |
| **Quizzes** | **50 pts.** |
| **Amino Acid Project** | **50 pts.** |
|  | **1000 pts** |

**Grading:**

**Grading Scale:**  **A = 920-1000 pts. B+= 880-910 pts. B = 800-879 pts. C+ = 770-799 pts C = 660-769 pts.**

**D+= 600-659 pts. D = 560-599 pts. F = 559 pts. Or lower**

***Course policies***

**Class Attendance:** Required. In accordance with University policy, students must attend at least 75% of the classes to pass the course. Attendance will be considered in the case of borderline grades; attending less than 80% of the course meetings will lower overall grades by one letter grade.

**Academic Responsibility:** Winthrop University has a strict Student Conduct Code printed in the Winthrop University Student Handbook. Students should read it carefully and avoid any infractions such as cheating and plagiarism. Violations of Winthrop’s Student Conduct Code will result in failing grade for the entire course. Details of the policy can be found online (http://www2.winthrop.edu/studentaffairs/handbook/StudentHandbook.pdf)

**Students with Disabilities:** Winthrop University is dedicated to providing access to education. If you have a disability and need accommodations, please contact Gena Smith, Coordinator, Services for Students with Disabilities, at 323‐3290, as soon as possible.