

## ABIO 541: Principles of Biochemistry (3 credit hrs)

Fall 2005 (Tu & Th 1:40 to 2:55)

**Instructor:** Dr. James Yates (Rm 205) (X3390)  
Office hours: posted (or by appointment)

**Text:** Biochemistry 3<sup>rd</sup> Ed. (Garrett & Grisham)

**Course Goals:** (1) To introduce students to basic theoretical and practical concepts of Biochemistry including: (a) the molecules and interactions occurring in cells (b) the chemistry of amino acids (c) protein structure (d) protein function (e) carbohydrate structure (f) enzyme kinetics (g) enzyme mechanisms and regulation. (2) To provide students with the opportunity to investigate recent discoveries in the field. (3) To integrate the concepts of Biochemistry with basic concepts of other areas of Biology and Chemistry.

**Organization of Course:** The course is organized into several topics. Students are expected to use the reading list below to determine the reading assignments. Questions appearing at the end of chapters may appear on quizzes. In-class problem sets will be assigned.

### Grading Policy:

Weekly Quizzes/Homework	64%
Problem sets	8%
Final	8%
Report	15%
Class Participation	5%

**Assessment of Students:** Students will be evaluated on their performance on all of the following: weekly quizzes, problem sets, a final quiz, the written report and participation in class discussions. For the report, students will select one recent research article and submit the abstract for approval by midterm. The article must address some area of macromolecular structure, function or kinetics.

**Student Competency:** To successfully complete this course, a student must demonstrate a basic understanding of the principles and applications of the chemistry and molecular logic of living cells; including the structural, functional and kinetic characteristics of cellular components.

**Statement for Disabled Students:** If you have a physical, psychological and/or learning disability which might affect your performance in this class, please contact the Office of Disability Services, 126A B&E (803) 641-3609 as soon as possible. The Disability Services Office will determine appropriate accommodations based on medical documentation.

### COURSE OUTLINE

Topic	Chapter	Topic	Chapter
Cell Chemistry	1	Carbohydrates	7
Water	2	Enzyme Kinetics	13
Amino Acids	4	Enzyme Mechanisms	14
Proteins: Primary Structure	5	Enzyme Regulation	15
Proteins: Secondary, etc. Structure	6	<i>Thermodynamics</i>	3

Quiz Schedule	8/25	9/1	9/8	9/15	9/22	9/29	Final 12/13 (2:00)
	10/6	10/20	10/27	11/3	11/10	11/17	