

# Advanced Biochemistry/Chemical Biology – CHM 4034 Syllabus

CHM 4034-136E, Spring 2016: Tuesday and Thursday (9:35-11:30am) in Leigh 242  
Prof. Rebecca A. Butcher, butcher@chem.ufl.edu

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**Course Description.** We will cover advanced topics in biochemistry and chemical biology.

**Prerequisites.** CHM 3218 (or its equivalent).

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**Topics to be covered:** Physical properties of nucleic acids, amino acids and proteins; DNA/RNA synthesis; Translation; Enzymes and point mutagenesis; Peptide synthesis; Unnatural amino acids; DNA damage & repair; Directed evolution of enzymes; Natural product biosynthesis; Antibiotics; Chemical genetics; Small-molecule/drug discovery

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**Textbook:** Principles of Biochemistry by David Nelson and Michael Cox, 5<sup>th</sup> Edition, WH Freeman and Company, 2008 will provide a review of basic background, but is not required. Required readings will come from review articles and some research articles. The articles will be posted on E-learning.

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**Problem Sets.** Problem sets will be posted on E-learning. Your answers for certain questions on each problem set (those marked with an asterisk) will be collected for grading (check plus = 100%, check = 75%, check minus = 50%). Problem sets are due at the beginning of class: Problem Set #1 is due on **Jan. 31**, Problem Set #2 is due on **Feb. 28**, and Problem Set #3 is due on **Apr. 4**. An answer key will be posted for all questions on E-learning on those dates. Although only questions marked with an asterisk will be graded, you should do the entire problem set in order to prepare for the exams. Additionally, discussion questions for the required reading will be posted and discussed in class, and similar questions may appear on the in-class exams.

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**Grading.** There will be 3 in-class exams and no final exam. The exams are not designed to be cumulative; but you may expect some natural amount of material from a previous midterm to be important and necessary. Your grade will be based on the 3 in-class exams (22% each), as well as a literature presentation (22%), a problem set grade (8%), and a participation grade (4%). Your participation grade will depend on your participation in discussions of the assigned articles and on your attendance and asking of questions during the presentation portion of the class.

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**Office Hours.** Prof. Butcher's proposed office hours are Fridays 3-4 pm in Leigh 340 and by appointment (schedule over e-mail).

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**Makeup Examinations.** Since the lowest exam score will be dropped, no makeup examinations will be scheduled.

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**Presentations.** You will be randomly assigned one of the three presentation days. You must e-mail me a PDF file of the article that you would like to present for approval. Your article must be approved by **Mar. 24** at 5 pm. In order to be approved, your article must meet certain criteria that will be posted on E-learning.

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**Accommodations for students with disabilities.** Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

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**UF Honor Code: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.**

"The university requires all members of its community to be honest in all endeavors. A fundamental principle is that the whole process of learning and pursuit of knowledge is diminished by cheating, plagiarism and other acts of academic dishonesty. In addition, every dishonest act in the academic environment affects other students adversely, from the skewing of the grading curve to giving unfair advantage for honors or for professional or graduate school admission. Therefore, the university will take severe action against dishonest students. Similarly, measures will be taken against faculty, staff and administrators who practice dishonest or demeaning behavior."

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