Course: Chem. 828, Bioanalysis
Instructor: Dr. Michael Johnson
Office Location: Room 3071 Malott Hall
Class Location: Malott Room 3059
Class Time: MWF, 10:00 – 10:50 AM

Office Hours: I will happily meet with you at any point in the semester. I prefer that you email me quick questions or email me to make an appointment for in-depth questions. If it is possible, I will meet with you within 24 hours of receiving your appointment request.

E-mail: johnsonm@ku.edu

Course Description: There will be three class periods of 50 minutes each week. This is a graduate class designed to introduce students to advanced concepts in bioanalytical chemistry. The course is not designed to be a comprehensive “survey” of the field. Rather, the chief goal is to give students the tools they need to teach themselves analytical approaches to biological problems through critical thinking and using the primary literature.

Graded work:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points Possible</th>
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<tbody>
<tr>
<td>Homework</td>
<td>200 (100 pts each)</td>
</tr>
<tr>
<td>Discretionary/quizzes</td>
<td>200</td>
</tr>
<tr>
<td>Research Proposal</td>
<td>200</td>
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<tr>
<td>Exams</td>
<td>400 (200 pts each)</td>
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Attendance at each class is mandatory.

Collaboration on homework is highly recommended. Providing answers to homework is absolutely forbidden. You may discuss the homework with your peers and work on it in groups, but each person must turn in his/her own assignment. Your homework must be in your words only, and it may not be copied from any source or be the same as your classmates. DO NOT SHARE YOUR COMPLETED HOMEWORK ANSWERS WITH YOUR CLASSMATES.

Assigning Grades Grades will be assigned according to the following grading scale:
A  90-100% “Exceeds Expectations”
B  80-89% “Meets Expectations”
C  70-79% “Sub-standard performance”
D  60-69%
F   <60%
The following is a rough outline of the topics I expect to cover in this course. I will provide a more detailed outline on the first day of class. It is recommended that you obtain a copy of the textbook, *Introduction to the Pharmaceutical Sciences: An integrated approach, 2nd edition* by Nita K. Pandit and Robert P. Soltis. I will provide a copy of this textbook and others on reserve at the library. However, given the large number of students (approximately 20) registered for this course, access to these materials may be limited. You can order this book from Amazon for about $20.

I. Introduction to bioanalysis
   A. What is Bioanalysis?
   B. Goals
   C. Learning Strategies
   D. Primers: Important issues in bioanalysis

II. Writing an effective proposal
   A. Individual components that make up a proposal
   B. Your orals proposal

III. Bioanalysis in drug disposition
   A. Physicochemical properties of drugs
   B. Pharmacokinetics—ADME
   C. In vitro techniques for investigating drug metabolism
   D. Sample preparation
   E. Mass Spectrometric identification of metabolites
   F. Immunoassay techniques

   *Lecture 24, Mid-term exam—Drug disposition and methods of analysis given in class*

IV. Neurochemical analyses of model organisms
   A. Introduction
   B. Model organisms used for analysis of disease states
   C. Methods of neurochemical analyses in different model organisms

   *Lecture 45, proposals due*

*Final exam—Neurochemical analyses of model organisms*