

Syllabus: Chemistry/Biology 450
Biomolecular Structure and Disorder in Human Disease
Spring 2012—W 1:30pm, Rm 328 Martin

Dr. Jeffrey K. Myers
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OFFICE HOURS: M 10:00-noon, W 10:00-noon

Scheduled office hours are not the only times you can see me. Anytime you find me in my office, my door is open and I'm not on the phone or with someone else, feel free to come in and talk to me. Additionally, you may wish to make an appointment ahead of time (call, e-mail or talk to me after class).

PREREQUISITES:

Chemistry 351 and 361 or permission from instructor (generally granted for students with enough biology courses—303 and one additional 200+ level biology from group A).

ABOUT THE COURSE:

Chemistry 450 is an upper level chemistry course designed to expose students to advanced topics in biochemistry. The course topic for 2012 is order and disorder in biomolecular structure and human disease.

The course will cover these general areas:

1. Protein and nucleic acid structure and dynamics
2. Disorder in protein and nucleic acid structures
3. Functional implications of disorder
4. Implications of disorder for disease

EXAMINATIONS and GRADING:

Papers and Projects: There will be a midterm paper worth 100 points. The final project is worth 200 points and will consist of a written proposal and an oral presentation.

Class participation: Participation in class is worth 100 points. This includes participation in class discussions, in class presentations, etc.

Course Letter Grade: Your letter grade will be based on percentage of total points available (400). You will receive at least the following grades based on the percent of points accumulated:

- A: $\geq 90\%$
- B: $\geq 80, < 90\%$
- C: $\geq 70, < 80\%$
- D: $\geq 60, < 70\%$
- F: $< 60\%$

Plus/minus grades are assigned at the discretion of the instructor to indicate proximity to a grade boundary.

LEARNING DISABILITIES: If you are a student with a learning disability documented by Davidson College who might need accommodations, please contact Kathy Bray, Associate Dean of Students (kabray@davidson.edu) to work out the details.

ACADEMIC INTEGRITY: The College's honor code is at the heart of everything we do here at Davidson:

"Every student shall be honor bound to refrain from cheating (including plagiarism). Every student shall be honor bound to refrain from stealing. Every student shall be honor bound from lying about official college business. Every student shall be honor bound to report immediately all violations of the Honor System which come under his

or her observation; failure to do so shall be a violation of the Honor System. Every student found guilty of a violation shall ordinarily be dismissed from the college for a period."

When you affix your name to work that is graded you are making the following pledge:

"On my honor I have neither given nor received unauthorized information regarding this work, I have followed and will continue to observe all regulations regarding it, and I am unaware of any violation of the Honor Code by others."

CLASS ATTENDANCE: From the College catalogue:

"Regular class attendance is the student's obligation, and the student is responsible for all the work of all class meetings. A student who is absent from more than one-fourth of the course meetings scheduled by the instructor shall be assigned a grade of F"

Excused absences for college-approved activities are limited to 3 class periods total for the semester. Please let me know of these instances so that you don't lose class participation points. Since we only meet once a week, it is expected that absences will be kept to a bare minimum.

CLASS EXPECTATIONS: A variety of reading assignments will be given at various times. You will be expected to read the material before the class, and in enough detail to contribute positively to a discussion of the material. This is a discussion based class, and you are expected to be prepared. During class, please be courteous to your fellow students. Silence cell phones and other communications devices during class.

COURSE SCHEDULE

Date	Topic/Activity
Jan 18	Course introduction, review of protein and nucleic acid structure
Jan 25	Techniques to probe macromolecular structure; how to read a research article
Feb 1	Protein and nucleic acid dynamics (These things are moving!), FP
Feb 8	Disordered macromolecules—shattering the structure/function paradigm, FP
Feb 15	Functional disorder—order out of chaos, FP
Feb 22	Group article presentations
Feb 29	Midterm paper peer evaluations (rough draft due Feb. 26)
Mar 7	Spring Break
Mar 14	Midterm paper due; Protein folding and stability, FP
Mar 21	Topic for final project due; Protein conformation and disease, FP
Mar 28	Disorder and disease—student selected topics and student lead discussion
Apr 4	Student presentations on paper related to final project
Apr 11	Student presentations on paper related to final project
Apr 18	Peer review of final paper rough draft (rough draft due Apr. 15)
Apr 25	Student final presentations
May 2	Student final presentations
May 11	Final papers due