Chemistry 435 Fall 2016 Course Guidelines

Instructor: Daniel Graham, Flanner 401, 773-508-3169, dgraha1@luc.edu

DG Office Hours: M, W 1100 – 1200, Th 10:30 – 11:30, or by arrangement.

Class Hours: M, W, F: 12:35 – 13:25; Place: Mundelein Center, Room 606

Chemistry 395/435 is a special topics course entitled *Thermodynamics with Applications to Protein Structure Analysis.* The first third of the semester will focus on the core ideas of classical thermodynamics. The last two thirds will be devoted to fundamentals and techniques of protein sequence analysis.

Recommended Texts:

Thermodynamics by Enrico Fermi (Dover paperback, bargain price ☺♫)

Protein Structure Analysis at Low Levels: Ways of Approaching Amino Acid Sequences and Sets by DJG.

Thermodynamics Topics:

Fundamentals, types of systems, equations of state, ideal versus non-ideal behavior, thermodynamic laws, reversible and irreversible pathways, potentials, and solutions.

Protein Structure Topics:

Building blocks and assembly, protein complexity, mathematical probability and information, base and base+ sequence analysis, sequence design

Exams:

There will be three exams consisting of questions and problems representative of the lectures and assignments. There is an honor code: one's exam signature will be taken as a statement of honest, independent work. Instances of academic dishonesty will warrant immediate failure of the course plus referral to the Arts and Sciences Dean's office. Please review the College's policy on academic integrity via the Loyola University website.

Exams will be graded and returned as soon as possible. All grading questions, points of clarification, and errors must be brought to light no later than one week after return of an exam.

If special provisions are needed for the exams and other aspects of Chemistry 395/435, please consult with DG during the first week.

Assignment of Grades:

The following scale will be used: 87% - 100% A-, A; 72% - 86% B-, B, B+; 59% - 71% C-, C, C+; 50% - 58% D, D+; < 50% F. Grades will be assigned by weighting the exams 0.75 (0.25 each) and assignments 0.25.

It goes without saying that physical chemistry and related topics are not easy to learn. However, the process is rewarding if effort is made to master fundamentals as they appear. Students are urged to work with one another and the instructor to alleviate problems before they become serious.

Assignments: There will be weekly assignments. Students are urged to complete these with the help of each other and the instructor.

Sakai Materials: There will be postings on *Sakai* during the semester. Please check the website every few days for the latest postings. Errors should be brought to light as soon as possible.

Schedule:

The typical week will feature M, W, F lectures starting at 12:35 PM. Major dates are as follows:

M 082916: First Class Meeting.

M 090516: Labor Day Holiday☺♫

F 100716: First Exam

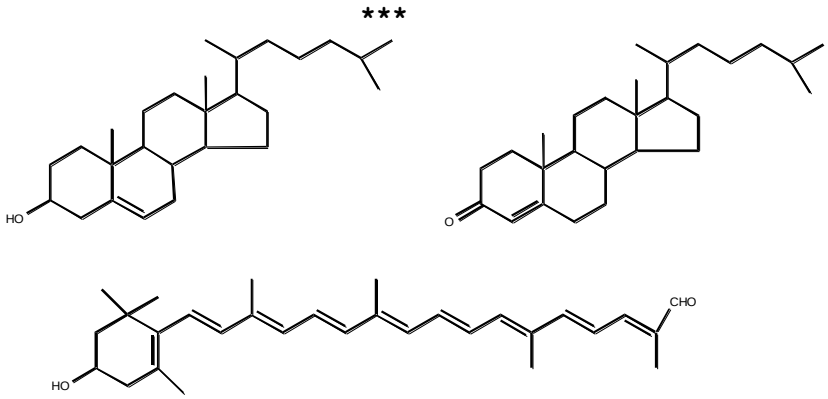
M 101016: Fall Break ☺♫

F 111816: Second Exam

W 112316: Beginning of Thanksgiving Break ☺♫

F 120916: Last Class Meeting

F 121616: Third Exam



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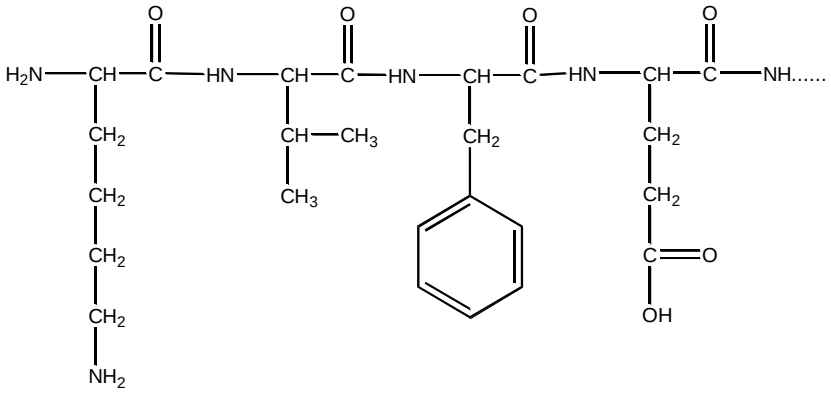
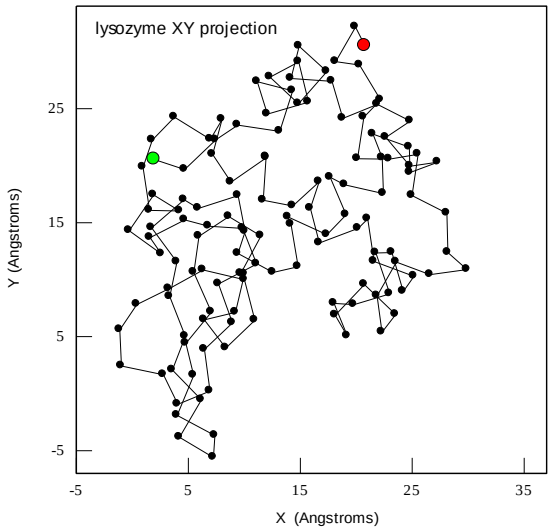
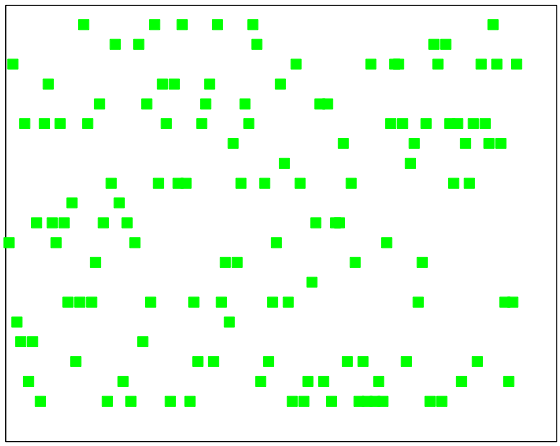
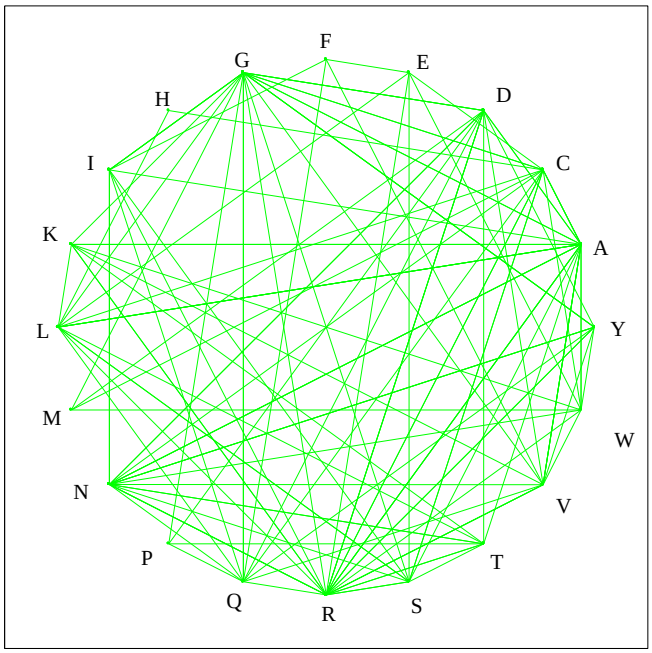


lysine (K) valine (V) phenylalanine (F) glutamic acid (E)







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