CHEM 4700 – Protein Structure and Function
Course Syllabus – Spring 2015

Instructor Information:

Dr. Michael Kirberger
Office phone: 678-466-4873
Office: NBS 145
Email: MichaelKirberger@mail.clayton.edu
Internet: http://faculty.clayton.edu/mkirberger/home

Spring 2015 Office Hours:

Monday  2:00 pm – 4:00 pm
Tuesday 8:00 am – 9:00 am
Thursday 8:00 am – 11:00 am

Textbook Information:

Text:


Text Coverage:

Chapters 1 – 6, 12, 13, 17, 18

Course Description:

CHEM 4700 is an elective course covering the fundamental aspects of protein structures, and how these structures relate to functions. Topics to be covered include amino acids and their properties, types of structural elements, classification of proteins, protein functions, determination of protein structures, and applications of data and technology to study protein structure and function.

Course Prerequisites and Co-requisites:
Pre-requisite: CHEM 2412, Organic Chemistry II

Disability Services:

Individuals with disabilities who need to request accommodations should contact the Disability Services Coordinator, Student Center Room 255, 678-466-5445, disabilityservices@clayton.edu.

Notebook Computer Requirement:

Each CSU student is required to have ready access throughout the semester to a notebook computer that meets faculty-approved hardware and software requirements for the student's academic program. Students will sign a statement attesting to such access. For further information on CSU's Official Notebook Computer Policy, please go to http://itpchoice.clayton.edu/policy.htm.

The course web page may offer you additional instructional aides: study sheets, study sheet answers, copies of sample examinations, data reference sheets, etc. It is your responsibility to become familiar with these materials.

Everyday coursework in class will not require the use of a computer. Therefore, unless there is a compelling reason, cleared through the instructor, students should not have their computers open during the lectures or exams.

Computer Skill Prerequisites:

1. Able to use the computer's operation system (Windows®)
2. Able to access and send e-mail (Outlook® or Outlook Express®)
3. Be able to attach and retrieve attached files via e-mail.
4. Able to use a Web browser (Internet Explorer®) and search engine
5. Able to download files from a web site to your computer
6. Able to use a word processor system (Word®)
7. Able to use a spread sheet system (Excel®). Your instructor may have access to more font sets than your computer currently holds. Therefore, there may be some differences in the appearance of symbols when viewing sample exams and exercise sheets. If this is a problem, consult the instructor.

You should develop the habit of checking your e-mail daily. Because of the number of students we typically have, there may be some delay in the instructor's response to an individual's e-mail. Do not send time-sensitive information via e-mail--use the old system of the telephone. A delivered e-mail does not relieve you of the responsibility of informing the instructor about some concern. On the other hand, the instructor may send e-mails with information vital to your success in the course. Instructors will only respond to CSU e-mail addresses.
In-class Use of Student Notebook Computers:

Computers will be required to access course materials and to communicate with your instructor. Everyday coursework in class may require the use of a computer. Computers and/or cell phones cannot be used as a calculator for exams.

Student Learning Outcomes:

Course Objectives:

Students should be able to

- Categorize the amino acids based on properties
- Understand the different classifications of protein structure, and how these structural elements affect the overall structure
- Utilize different classification schemes to differentiate proteins based on structural or functional aspects
- Understand the tools used to elucidate or predict protein structure

Education Policy:

The content of this course syllabus correlates to education standards established by national and state education governing agencies, accrediting agencies and learned society/ professional education associations. Please refer to the course correlation matrices located at the following web site

http://www.clayton.edu/arts-sciences/teachered/standardsoutcomes

Class Meetings:

<table>
<thead>
<tr>
<th>CRN</th>
<th>Section</th>
<th>Days</th>
<th>Time</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>20725</td>
<td>01</td>
<td>MW</td>
<td>1700-1815</td>
<td>U416</td>
</tr>
</tbody>
</table>

Evaluation:

Your grade in CHEM 1211 will be based upon the following components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Assessments (3) @ 100 points</td>
<td>300</td>
</tr>
<tr>
<td>Quizzes/Graded Homework</td>
<td>50</td>
</tr>
<tr>
<td>Oral Presentation</td>
<td>100</td>
</tr>
</tbody>
</table>
Grading:

The grade you receive in Chemistry 1211 will be based upon the following distribution:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage Range</th>
<th>Point Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90% or greater</td>
<td>540 – 600</td>
</tr>
<tr>
<td>B</td>
<td>80% - 89%</td>
<td>480 - 539</td>
</tr>
<tr>
<td>C</td>
<td>70% - 79%</td>
<td>420 - 479</td>
</tr>
<tr>
<td>D</td>
<td>60% - 69%</td>
<td>360 – 419</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 60%</td>
<td>&lt; 360</td>
</tr>
</tbody>
</table>

Assessments:

There will be three (3) classroom assessments and one 2-hour final (comprehensive.) The assessments will be announced approximately one week in advance whenever possible and attendance is mandatory. **Make-up assessments will not be given.** Students will be given the opportunity to replace one of the 3 classroom assessment grades with the percentage that they earn on the final exam, which would include a missed assessment. The final grade will therefore include 3 assessments at 100 points each, quizzes/graded homework worth 50 points, an oral presentation worth 100 points, and a final exam worth 150 points. A missed final exam will result in a zero for the final exam unless prior arrangements have been made with the instructor.

Make-ups / Late work:

Due to the difficulty in making up new assessments, missed exercises will be graded as a zero or other arrangements will be made at the discretion of the instructor, most likely this is an increased percentage worth of the final exam.

Homework:

Reading assignments are tentatively made on this syllabus. Homework problems will be assigned. All assignments will be due at the time designated by the instructor.

Mid-term Progress Report:

The mid-term grade in this course will be issued on or before March 6 and reflects approximately 35% of the entire course grade. Based on this grade, students may choose to withdraw from the course and receive a grade of "W." Students pursuing
this option must fill out an official withdrawal form, available in the Office of the Registrar.

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**Tentative Course Schedule:**

This schedule is general and tentative. The subject matter may vary some from this schedule.

*Please read each chapter before the material is covered in class!*

<table>
<thead>
<tr>
<th>Dates</th>
<th>Topic</th>
<th>Lectures</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/12 – 01/14</td>
<td>Introduction (Syllabus, class management, etc.), Building Blocks of Proteins (Chapter 01)</td>
<td>Lecture 01</td>
</tr>
<tr>
<td>01/19</td>
<td>MLK Holiday</td>
<td></td>
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<tr>
<td>01/19 – 01/21</td>
<td>Motifs of Protein Structures (Chapter 02)</td>
<td>Lecture 02</td>
</tr>
<tr>
<td>01/26 – 01/28</td>
<td>Quiz 01 Alpha Domain, Alpha/Beta Structures (Chapter 03, 04)</td>
<td>Lecture 03, 04</td>
</tr>
<tr>
<td>02/02</td>
<td>Exam 1 (Chapters 01-03)</td>
<td>Lecture 03, 04</td>
</tr>
<tr>
<td>02/04 – 02/09</td>
<td>Beta Structures (Chapter 05)</td>
<td>Lecture 05</td>
</tr>
<tr>
<td>02/11 – 02/16</td>
<td>Quiz 02 Folding and Flexibility (Chapter 06)</td>
<td>Lecture 06</td>
</tr>
<tr>
<td>02/18 – 02/23</td>
<td>Membrane Proteins (Chapter 12)</td>
<td>Lecture 07</td>
</tr>
<tr>
<td>02/25</td>
<td>Exam 2 (Chapters 04-06, 12)</td>
<td></td>
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<tr>
<td>03/02 – 03/04</td>
<td>Signal Transduction (Chapter 13)</td>
<td>Lecture 08</td>
</tr>
<tr>
<td>03/06</td>
<td>MidPoint</td>
<td></td>
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<tr>
<td>03/09 – 03/14</td>
<td>Spring Break</td>
<td></td>
</tr>
<tr>
<td>03/16 – 03/18</td>
<td>Fibrous Proteins (Chapter 14)</td>
<td>Lecture 09</td>
</tr>
<tr>
<td>03/23 – 03/25</td>
<td>Quiz 03 Prediction, Engineering and Design of Protein Structures (Chapter 17)</td>
<td>Lecture 10</td>
</tr>
<tr>
<td>03/30</td>
<td>Exam 3 (Chapters 13, 14, 17)</td>
<td></td>
</tr>
<tr>
<td>04/01 – 04/08</td>
<td>Determination of Protein Structures (Chapter 18)</td>
<td>Lecture 11</td>
</tr>
<tr>
<td>04/13 – 04/27</td>
<td>Student Presentations</td>
<td></td>
</tr>
<tr>
<td>TBA</td>
<td>Final Exam</td>
<td></td>
</tr>
</tbody>
</table>
Course Policies:

General Policy:

Changes or additions to this syllabus, including readings, exam dates, grading, and course policies can be made at the discretion of the instructor at any time. If such changes are made, they will be posted on the course homepage of the instructor's web page.

General data from this course may be used by the instructor for research on improved methods of teaching, leading to presentation or publication. Data that would be used for this purpose would consist of anonymous data, with no identifying information from particular students (e.g., the overall average for the course, NOT grades from particular students). If you do not wish for your instructor to include your data in such studies, fill out the withdrawal of consent form and bring it to your instructor.

Students must abide by policies in the Clayton State University Student Handbook. Students are also expected to abide by the guidelines in the "Basic Student Responsibilities" document. Of particular concern is any sort of disruptive behavior where a student is not showing proper respect to the instructor or other students in the class. Such behavior will not be tolerated and a student engaged in such behavior will be required to leave the class, forfeiting any points that are associated with that day's activity. The ability of the student to return to class is determined by the instructor, based on the severity of the disruption, and can range from missing the current class period up to administrative withdrawal from the course. In addition, charges may be filed with the Office of Judicial Affairs.

Grades will not be communicated by phone or email - graded materials can only be picked up by the individual to whom they belong.

University Attendance Policy:

Students are expected to attend and participate in every class meeting. Instructors establish specific policies relating to absences in their courses and communicate these policies to the students through the course syllabi. Individual instructors, based upon the nature of the course, determine what effect excused and unexcused absences have in determining grades and upon students' ability to remain enrolled in their courses. The university reserves the right to determine that excessive absences, whether justified or not, are sufficient cause for institutional withdrawals or failing grades.

Course Attendance Policy:

Attendance is required. If you are more than 10 minutes late to class you will be marked as absent. If you are absent from more than 50% of the classes this semester (excused or unexcused) you will be automatically withdrawn from the class. Come to class prepared. Absences may be excused if you provide the
instructors with a note from a competent authority (doctor, judge, etc.). The excuse must specifically indicate the dates that are to be excused, and must be presented upon the first class day that the student returns to school.

**Calculators:**

Electronic calculators are permitted (encouraged) for homework and assessments. Scientific calculators are highly encouraged. You may NOT use a calculator memory for storage of data or information (formulas) for use on assessments or the final. This would result in an automatic zero grade on the assessment. The battery and working of your calculator will be your responsibility. You will find it useful to have your calculator in class. You may not use your computer or cell phone calculators for exams.

**Visitors:**

Friends, children, etc. are strictly prohibited from attending class without the permission of the instructor.

**Academic Misconduct:**

Any type of activity that is considered dishonest by reasonable standards may constitute academic misconduct. The most common forms of academic misconduct are cheating and plagiarism. All instances of academic dishonesty will result in a minimum punishment of a grade of zero for the work involved. All instances of academic dishonesty will be reported to the Office of Student Life/Judicial Affairs. Judicial procedures are described at [http://adminservices.clayton.edu/studentlife/judicial_affairs.htm](http://adminservices.clayton.edu/studentlife/judicial_affairs.htm).

Specific forms of cheating on exams include, but are not limited to, copying, using supplemental materials, or using any internet or phone device. Reaching for, appearing to use, or using a cell phone is considered cheating and will be punished as stated above. It is imperative that you silence your cell phone during class and exams. It is extremely disruptive to students and myself when cell phones ring. If your cell phone continues to ring during class, you may be asked to leave the room. If your cell phone rings during an exam, you may also be asked to leave the room. This means that your exam is over regardless of the progress you have made on the exam.

**Punctuality:**

Arriving to class on time is your responsibility. Coming in late is disturbing to the entire class and detracts from the learning experience. If tardiness become habitual, the instructor may institute measures to correct this problem. This could range from refusal to allow admittance to class on that day or a deduction of points from the grade.

**Courtesies to Your Classmates:**
1. Arrive to class on time.
2. Avoid disruptive behavior in class: talking, snoring, children, etc.
3. Please ensure that your cell phones and other electronic devices do not become a distraction in class. Should one of these devices go off during class, the offending student may be penalized by:
   a. Having points deducted from his/her grade.
   b. Being asked to leave the classroom and being reported for disruptive behavior.
4. If you must leave early, please leave quietly by a back door if possible.
5. Use the pencil sharpener before class begins.

**E-mail:**

Each student must activate his/her e-mail account at Clayton State University. The class list serve will be the only method for communicating with the class by email. Important announcements will be sent to the class on the class list serve. You should also check the instructors web page regularly for new postings. Handouts given in class and other important items will be posted on the web page for this class.

Communication from personal email accounts (e.g., Yahoo, gmail, etc.) is acceptable, as long as the following requirements are met:

1. You clearly identify yourself in the body of the email
2. You clearly identify which class you are writing to me about
3. The subject line of your email is suitably descriptive that I can tell it isn't Spam or a virus (e.g., do not send emails with a subject of "Hello", etc.)
4. You do not ask me specific questions concerning grades, as they cannot be discussed by email.

Emails that do not meet these requirements will not receive a response.

**Disruptions of the Learning Environment:**

Behavior which disrupts the teaching–learning process during class activities will not tolerated. While a variety of behaviors can be disruptive in a classroom setting, more serious examples include belligerent, abusive, profane, and/or threatening behavior. A student who fails to respond to reasonable faculty direction regarding classroom behavior and/or behavior while participating in classroom activities may be dismissed from class. A student who is dismissed is entitled to due process and will be afforded such rights as soon as possible following dismissal. If found in violation, a student may be administratively withdrawn and may receive a grade of WF.

A more detailed description of examples of disruptive behavior and appeal procedures is provided at:

http://a-s.clayton.edu/DisruptiveClassroomBehavior.htm
Student Survey Requirement:

Students have the responsibility to complete the Student Survey and Course/Instructor Evaluation for each course and each instructor every semester. If this is not done during the allotted time period, the student will be restricted from seeing their final course grade for a period of approximately one week after final exams have ended. Instructors are not allowed to give course grades to those who did not complete these evaluations. Also, no grades of any kind will be given out over the telephone or email due to federal privacy laws.