CHEM 343/344: Physical Chemistry II (2/3 Credits)  
South Dakota School of Mines and Technology  
Chemistry/Chemistry Engineering Building, Room C302  
MWF 11:00-11:50 am  
SPRING 2008

INSTRUCTOR: Justin P. Meyer  
Office: Chemistry and Chemical Engineering 122  
Phone: 394-2431  
Email: Justin.Meyer@sdsmt.edu

Office Hours: Monday, Wednesday, Friday 9:00-10:50 am, or by appointment

Course Description:  
343: Kinetic theory of gases; statistical thermodynamics and properties of solids; chemical kinetics and kinetics at interfaces.  
344: A study of the fundamental principles governing the behavior of chemical systems. Kinetic theory of gases; statistical thermodynamics and properties of solids; chemical kinetics and kinetics at interfaces; quantum mechanics and spectroscopy.  
Duplicate credit for CHEM 343 and CHEM 344 not allowed.

Course Prerequisites:  
343: Prerequisites: CHEM 341 or 342, and PHYS 213.  
342: Prerequisites: CHEM 342 and PHYS 213.

TEXT: Physical Chemistry, 8th Ed, Peter Atkins-Julio de Paula, Freeman

COURSE POLICIES:
Attendance: Attendance at lectures is not required, but is expected.

Grading: Your final grade will be determined from a weighted average of your exam grades and your homework grades. Exams (term and final) will make up 80% of your overall grade while homework will make up 20%. Homework must be turned in by the specified due date and time.

Homework. Collaboration with other students is allowed/encouraged. Remember the definition of collaboration: ‘To work together, especially in literary, artistic or scientific work’ (Websters). This means you need to contribute, not copy. If homework is done in a group, each student must hand in there own copy of the results (no homework with multiple names signed on it). Make sure homework is neat, you may lose points for homework that is hard to follow. LATE HOMEWORK WILL NOT BE ACCEPTED.

Exams: Up to eight exams will be given during the course of the class. These exams will be given at times decided in class prior to the exam. They may be either take home, in class, or a combination of both, again decided prior to the exam.

Final Exam: Will be a combination of take home and in class problems. Take home problems will be given out in class a week prior to the final exam time of Tuesday, May 8th at 2:00 pm. This exam will likely be comprehensive and over any new material not previously tested on.

Withdrawal Deadline: The last day to drop this class with a grade of “W” recorded on your transcript is Thursday, April 10, 2007.
Objectives: The course is divided into three modules designed to expose the student to concepts in chemical kinetics, quantum theory and spectroscopy, statistical thermodynamics, and special topics as time allows. These dates are subject to change.

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<thead>
<tr>
<th>Module</th>
<th>Topics</th>
<th>Text Chapters</th>
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<tbody>
<tr>
<td>One</td>
<td>Molecules in motion, The rates of chemical reactions, Molecular reaction dynamics</td>
<td>21, 22, 24</td>
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<tr>
<td>Two</td>
<td>Quantum theory, Atomic structure and spectra, Molecular structure, Molecular spectroscopy</td>
<td>8-11, 13-15</td>
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<tr>
<td>Three</td>
<td>Statistical thermodynamics, Special Topics</td>
<td>16, 17, other</td>
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ADA Statement: Students with special needs or requiring special accommodations should contact the instructor, (Justin Meyer, at 394-2431) and/or the campus ADA coordinator, Jolie McCoy, at 394-1924 at the earliest opportunity.

Freedom in learning: Students are responsible for learning the content of any course of study in which they are enrolled. Under Board of Regents and University policy, student academic performance shall be evaluated solely on an academic basis and students should be free to take reasoned exception to the data or views offered in any course of study. Students who believe that an academic evaluation is unrelated to academic standards but is related instead to judgment of their personal opinion or conduct should contact the dean of the college which offers the class to initiate a review of the evaluation.

IF YOU HAVE QUESTIONS, ASK THEM.