CHEM 344: Physical Chemistry II (2/3 Credits)       Spring 2013
South Dakota School of Mines and Technology
C303       MWF 11:00-11:50 am
The 2 Credit Class Will Meet Jan. 13th, but the course will not start until Feb. 25th

INSTRUCTOR: Justin P. Meyer       Office: Chemistry and Chemical Engineering 122
                      Phone: 394-2431
                      Email: Justin.Meyer@sdsmt.edu
Office Hours: Monday, Wednesday, Friday 9-10:30 am, or by appointment

Course Description: 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. The two credit class will not cover quantum mechanics and spectroscopy.

Course Prerequisites: 342: Prerequisites: Chem 342 and PHYS 213.

TEXT: Physical Chemistry, 4th Ed, Silbey, Alberty, Bawendi; Wiley

COURSE POLICIES:

Grading: Your final grade will be determined from a weighted average of your exam grades and your homework/problem set grades. Exams (midterm and final) will make up 70% of your overall grade while homework/problem sets will make up 30%. Homework must be turned in by the specified due date and time.

   Homework and Problem Sets: Collaboration with other students is allowed. Remember the definition of collaboration is to work together, this means you need to contribute, not copy. If homework is done in a group, each student must hand in their 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: I will be giving a number of exams 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. A ‘cheat sheet’ can be used for in class exams. This sheet must be no bigger than an 8 x 11 sheet of paper with no photocopies or typing on it.

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 Thursday, May 1st 11:00 am. This exam will be mostly comprehensive and over some new material.

The following grading scale will be used as a starting point. The grade cut offs may be lowered, but will not be raised from those listed below:
A: 90%  B: 80%  C: 70%  D: 60%  F: <60%

Withdrawal Deadline: The last day to drop this class with a grade of “W” recorded on your transcript is April 3rd.
**Objectives:** The main objectives for the course are quantum mechanics, spectroscopy, statistical mechanics, kinetic theory of gases, and reaction kinetics and dynamics. On top of this other selected topics may be chosen as time allows.

<table>
<thead>
<tr>
<th>Topics</th>
<th>Chapters From Text</th>
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<tbody>
<tr>
<td>Quantum Mechanics and Spectroscopy*</td>
<td>9-11,13,14</td>
</tr>
<tr>
<td>Statistical Mechanics</td>
<td>16</td>
</tr>
<tr>
<td>Kinetic Theory of Gases</td>
<td>17</td>
</tr>
<tr>
<td>Reaction Kinetics</td>
<td>18-20</td>
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<tr>
<td>Selected Other Topics (Time allowed)</td>
<td>12,21,22</td>
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*Topics covered only for students taking 3 credits

**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.** Under Board of Regents and University policy student academic performance may be evaluated solely on an academic basis, not on opinions or conduct in matters unrelated to academic standards. Students should be free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled. Students who believe that an academic evaluation reflects prejudiced or capricious consideration of student opinions or conduct unrelated to academic standards should contact dean of the college which offers the class to initiate a review of the evaluation.

**Electronic Devices Policy:** Please turn off your cell phone before class starts. No text messaging in class. No headphones. If you wish to use a laptop in this class for purposes of note taking you will have to have your screen in the locked down position. Note that according to “Policy Governing Academic Integrity” in the SDSM&T Undergraduate Catalog, the instructor of record for this course has discretion of how acts of academic dishonesty are penalized, subject to the appeal process, and that “Penalties may range from requiring the student to repeat the work in question to failure in the course” (72-73). No other use of any other electronic/computer media is allowed during class time.