**CHE 361-001 PHYSICAL CHEMISTRY II SPRING 2006**

**All items on this syllabus are subject to change by the Instructor**

W. Vernon Hicks, Jr.
Office: SC 447
Telephone: 572-5406
e-mail: hicks@nku.edu
Office Hours: 9:10 – 10:45 MF, 10:00 – 10:45 W, Other times by appointment
Prerequisite: CHE 360 {note that MAT 220 (or MAT 222), and PHY 222 or 213 are required prerequisites for CHE 360}
Text: *Physical Chemistry*, 5th ed., by Ira M. Levine
Optional Supplement: *Student Solution Manual to Accompany Physical Chemistry*, *5th ed.,* by Ira Levine
Chapters Covered: 15-21 plus topics from 22, 23, 24, as time permits

Class Schedule: 8:00-8:50 a.m., MWF, SC 402 or
7:50-8:50 a.m., MWF, SC 402, depending on class vote
Problem Sessions: 7:00-7:50 a.m., W and 9:00-9:50 a.m., W
Regular Exams (4): 100 points each
Quizzes, Collected Homework: 0-150 points total
Final Exam: 150 points

The final exam is a standardized exam covering both CHE 360 and CHE 361. Regular exams may be scheduled outside of normal class time to allow sufficient time for their completion. The lowest regular test (or 2/3 of the final exam) will be dropped. If a regular test is missed for any reason, that will be the one dropped. If more than five quizzes are given, the lowest quiz will be dropped; if ten or more quizzes are given, the lowest two quizzes will be dropped.

| Grade Scale: | | |
|---|---|---|
| | A | 90 - 100 |
| | B | 80 - 90 |
| | C | 70 - 80 |
| | D | 60 - 70 |
| | F | below 60 |

LAST DAY TO DROP WITH A "W": March 27
FINAL EXAM: Wednesday, May 3, 8:00-10:00

| | |
|---|---|
| Test 1 | Chapters 15, 16 |
| Test 2 | Chapters 17, 23 |
| Test 3 | Chapters 18, 19 |
| Test 4 | Chapters 20, 21 |

The work you will do in any course is subject to the Student Honor Code. The Honor Code is a commitment to the highest degree of ethical integrity in academic conduct, a commitment that, individually and collectively, the students of Northern Kentucky University will not lie, cheat, or plagiarize to gain an academic advantage over fellow students or avoid academic requirements. Honor Code access: **http://www.nku.edu/~deanstudents/student_rights/honor_code.htm.** Cheating will not be tolerated. In accordance with the Code of Student Rights and Responsibilities, which can be found at http://www.nku.edu/~deanstudents/student_rights/, faculty members have the right to determine actions to be taken when a student is caught cheating. In particular, students found cheating on a test or quiz will receive a grade of zero for

that test or quiz. Faculty members reserve the right to dismiss or to have removed a disruptive student from their classrooms.

"Students with disabilities who require accommodations (academic adjustments, auxiliary aids or services) for this course must register with the Office of Disability Services. Please contact the disability service office in University Center Suite 320 or by calling (859) 572-6373 for more information. Verification of your disability is required in the disability services office for you to receive reasonable academic accommodations. Visit the disability services website at www.nku.edu/~disability."

## Assigned Homework

Chapter 15, p. 483

| | | | | | | |
|---|---|---|---|---|---|---|
| 15.1 | 15.20 | 15.33 | 15.60 | Note: | 15.4 | both answers are the same |
| 15.3 | 15.23 | 15.40 | | | 15.7 | also same as $E_{tr}=^3/_2nRT=3/2PV$ for ideal gas, so if P & V do not change, $E_{tr}$ will not change |
| 15.5 | 15.25 | 15.41 | | | | |
| 15.15 | 15.26 | 15.50 | | | | |
| 15.17 | 15.30 | 15.55 | | | 15.28 | browse |
| | | | | | 15.39 | browse, |
| | | | | | 15.46, 15.47 | (just know that equipartation principle not valid due to quantum mechanics) |
| | | | | | 15.51 | browse |

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| | | | | | | |
|---|---|---|---|---|---|---|
| 16.7 | 16.46 | 16.60 | | Note: | 16.9 | blood flow usually laminar, but can be turbulent; note small size of $\frac{dp}{dy}$ |
| 16.8 | 16.47 | 16.61 | | | | |
| 16.24 | 16.48 | 16.62 | | | 16.15 | browse only - need not work out |
| 16.40 | 16.58 | 16.63 | | | 16.57 | browse only; note that T dependence mainly due to viscosity change in solvent |
| 16.41 | 16.59 | 16.66 | | | | |

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| | | | | | | |
|---|---|---|---|---|---|---|
| 17.5 | 17.31 | 17.51 | 17.74 | note: | 17.20 | kinetically reversible not same as thermodynamically reversible |
| 17.10 | 17.33 | 17.52 | 17.76 | | | |
| 17.15 | 17.34 | 17.61 | 17.78 | | 17.64 | |
| 17.18 | 17.35 | 17.62 | 17.83 | | 17.67 | note results only |
| 17.23 | 17.38 | 17.68 | 17.87 | | 17.68 | $1.3 \times 10^{10}$ $dm^3mol^{-1}s^{-1}$ compared to $0.8 \times 10^{10}$ $dm^3mol^{-1}s^{-1}$ |
| 17.26 | 17.44 | 17.69 | 17.102 | | | |
| 17.28 | 17.47 | 17.73 | 17.111 | | 17.92 | do if interested in biochemistry |

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23.1 23.2 23.17 23.18

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18.7 18.36 18.50
18.12 18.39 18.54
18.22 18.40 18.56
18.23 18.41 18.58
18.30 18.45 18.69
18.32 18.47 18.70

Note: 18.9 note relatively large size of uncertainty
18.52 note: answer to C is very large
18.54 note only
18.71 historical trivia
18.25, 18.46 diagrams in text & in notes

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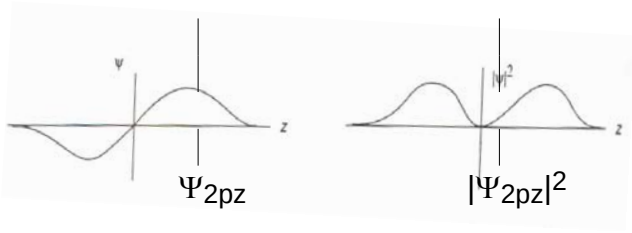
19.8 19.33 19.26 19.41
19.12 19.19 19.27 19.42
19.13 19.20 19.36 19.49
19.14 19.22 19.37 19.51
19.17 19.24 19.39 19.54
19.73

Note: 19.21

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20.2 20.24 20.35 20.55
20.5 20.28 20.36 20.56
20.11 20.29 20.37 20.57
20.19 20.32 20.38 20.61
20.23 20.33 20.39 20.62

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21.8 21.33 21.57 21.82*
21.23 21.47 21.66* 21.87
21.26 21.48 21.69* 21.92
21.29 21.49 21.70* 21.93
21.30 21.51 21.71*
21.31 21.55 21.74*

* only if cover NMR, ESR