NIU Course Syllabus for Physics 320

THERMODYNAMICS AND STATISTICAL PHYSICS

Spring Semester, 2013, Tuesday and Thursdays, 9:30-10:45 pm

Class room: DuSable Hall 464
Instructor: Yasuo Ito. La Tourette 218 and/or 101 (Electron Microscopy Lab)
            Tel: 815-753-6477, -8027
            e-mail: yito@niu.edu
Office Hours: Tuesdays, Thursdays, and Fridays 2:00 pm – 3:00 pm; Other hours by an appointment.
Prerequisites : MATH 232 and PHYS 260 or PHYS 261 or PHYS 283.
Credits: 3
Text book: Classical and Statistical Thermodynamics, A. H. Carter (required). Other references such as “Heat and thermodynamics” by Zemansky (out of print).
            Please read your textbook before coming to the class!!

The view graphs, homework assignments and their solutions will be posted on the Blackboard web course. Therefore, it is essential for you to familiarize with the Blackboard web course.

Grading (tentative):
10% Attendance. Attendance is MANDATORY. Students must attend at least 85% of the course (25 out of 30 classes).
40% Homework ESSENTIAL (Late penalty policy: 10% off for delay of every two day up to 1 week; 40% off for > 1 week)
25% Midterm Exams Tuesday February 14th and March 26th in class.
25% Final Exam (comprehensive) Thursday May 9th, 10:00 – 11:50 pm.
To pass this course, you must score at least 50% on the homework AND at least 50% overall.

For disabled students:
“NIU abides by Section 504 of the Rehabilitation Act of 1973 which mandates reasonable accommodations be provided for qualified students with disabilities. If you have a disability and may require some type of instructional and/or examination accommodation, please contact me early in the semester so that I can provide or facilitate in providing accommodations you may need. If you have not already done so, you will need to register with the Center for Access-Ability Resources (CAAR), the designated office on campus to provide services and administer exams with accommodations for students with disabilities. The CAAR office is located on the 4th floor of the University Health Services building (815-753-1303). I look forward to talking with you soon to learn how I may be helpful in enhancing your academic success in this course.”
(Tentative schedule) subject to change

0: Introduction to the course January 15, 2013.
1: The Nature of Thermodynamics January 17, 2013
2: Equations of State (and a bit of 11: The Kinetic Theory of Gases)
3: The First Law of Thermodynamics (and Appendix A)
4: Applications of the First Law

Mid-Term I: February 14th, Final due date for Homework Ch1, Ch2, Ch3, A1, Ch4
5: Consequences of the First Law
6: The Second Law of Thermodynamics
7: Applications of the Second Law

Mid-Term II: March 26th, Final due date for Homework Ch5, Ch6, Ch7
8: Thermodynamic Potentials
9: Chemical Potential and Open Systems
10: The Third Law of Thermodynamics

(12: Statistical Thermodynamics)

May 3rd, Final due date for Homework Ch8, Ch9, Ch10

Final Exam (Thursday. May 9th, 2013, 10:00 am – 11:50 am)