

Physics 515
Thermal Physics

Syllabus (Tentative)

Text: An Introduction to Thermodynamics and Statistical Mechanics, Stowe

Instructor: M. F. Masters, Ph.D.

Office: KT 127A

Phone: 481-6153

Office Hours: Anytime you can find me

Course Description: Equilibrium states, the concept of heat, and the laws of thermodynamics; the existence and properties of the entropy; different thermodynamic potentials and their uses; phase diagrams; introduction to statistical mechanics and its relation to thermodynamics; treatment of ideal gases.

Course Outcomes: At the end of this course you will have a understanding of ideal gasses, thermodynamics, and the statistical processes which give rise to thermodynamic behavior.

Homework: Homework assignments will include observations, small papers, problems and graphics assignments as assigned in class. Written answers are to be in complete sentences. The answers will NEVER be single word/number

Projects: There will be two projects assigned in class. Through these projects you will be expected to clearly demonstrate the physical principles learned in class.

Attendance: I expect full attendance. Since much of the course material is learned through class participation and to my knowledge you are not able to participate if you are not here, it negatively impacts YOU if you miss class because you were too lazy to get out of bed. You are ALWAYS responsible for EVERYTHING that occurs in class. DO NOT expect ME or your CLASS MATES to make up for unexcused absences. Absence is not an excuse. You are expected to participate and class participation will be taken into account in all grade decisions at the end of the semester. Late homework will not be accepted.

Things of which to be aware

- A. I expect participation. This class will involve discussion. You must participate in the discussion. You cannot hide. You will talk amongst yourselves to try to determine answers to questions. You will stay on topic. Part of science and education is to help you to learn to think about problems in a certain way. That is why there is the requirement for

- participation.
- B. I expect you to think. I expect you to think about your answers and your classmates' answers. Do not think that I will give you an answer or even correct a wrong assumption.
 - C. I expect you to observe. When you look at some phenomena, you must think about what that phenomena means.
 - D. Homework must be turned in on time. I will **not** accept late homework. Expect homework. The requirement is between **6 and 9** hours of out of class work a week for a 3 hour class. Start the homework as soon as it is assigned. If you let it wait until the last minute, you can be certain that I will have no sympathy.

Grades: Homework: 55%
 2 projects: 20%
 1 midterm exam: 10%
 1 Final: 15%
 100%

% Grade	Letter Grade	% Grade	Letter Grade
93-100%	A	73-77%	C
90-93%	A-	70-73%	C-
87-90%	B+	67-70%	D+
83-87%	B	63-67%	D
80-83%	B-	60-63%	D-
77-80%	C+	<60%	F