Physics 6311: Statistical Mechanics – Fall Semester 2021

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Home page: http://www.mst.edu/∼vojtat/class_6311/class_6311.html

Class time: 9:30 to 10:45am Tuesday and Thursday, Room: Butler-Carlton Hall 110

Prerequisites: Thermal Physics (Physics 4311) and Physics 6201 (Quantum Mechanics I)

Texts: David Chandler, *Introduction to Modern Statistical Mechanics* (Oxford, 1987)
Mehran Kardar, *Statistical Physics of Particles* (Cambridge, 2007)
The course will not always follow these books. Class attendance is crucial.

Further reading: K. Huang, *Statistical Mechanics*
L. D. Landau and E. M. Lifshitz, *Statistical Physics I*
M. Plischke and B. Bergersen, *Equilibrium Statistical Physics*
L. E. Reichl, *A Modern Course in Statistical Physics*
R. K. Pathria, *Statistical Mechanics*

Homework: Homework assignments will be given in class on Tuesday and also posted on the WWW. Assignments are due in class the following Tuesday. Solutions will be posted on Wednesday. Each assignment will be worth 40 points. A total of 400 points may be earned from the homework although more than 400 points will be assigned. This allows you to miss one or two problems without penalty.

Discussions among colleagues is allowed and encouraged. However, the solutions you hand in should represent your effort and thinking and not that of a group. You should document the intermediate steps of your solution (partial credit will be given) and list any reference material which you directly use.

Project: In addition to the homework you will work on one larger project in the second half of the semester. You will be able to choose from several topics (computer simulations, in-class talks). The project will be worth 100 points.

Tests: There will be a midsemester test counting 200 points and a comprehensive final exam counting 300 points. The midsemester test will be given on Tuesday, October 12 during class, and the final exam will be on Tuesday, December 14 from 3:00 to 5:00pm.

Grade: Course grade will be based on the total number of points earned on the homework, test and exam, expressed as a percentage of the total number of points available (1000). The relation between performance and grade will be the standard one: $A \geq 90\% > B \geq 80\% > C \geq 70\%$. The boundaries between the grades may be revised downwards (i.e., to the students benefit) depending upon the judgement of the instructor, but will not be revised upwards.

Accessibility and Accommodations: It is the university's goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please contact Student Disability Services at (573) 341-6655, sdsmst@mst.edu, visit http://dss.mst.edu/ for information, or go to mineraccess.mst.edu to initiate the accommodation process.

Academic Dishonesty: You should behave as responsible scholars and scientists. Academic dishonesty such as plagiarism, cheating, or sabotage is unethical and unacceptable and will be dealt with accordingly. For more detail, see the Student Academic Regulations which are available on the web at http://registrar.mst.edu/academicregs/index.html.

Title IX: The title IX policies, resources and reporting options are available online at http://titleix.mst.edu.

Emergency exits: Please familiarize yourself with the classroom emergency exists shown on the egress maps posted on-line at: http://designconstruction.mst.edu/floorplan/.

Complaints: It is hoped that any problems can be resolved through discussions between student and instructor. If there are any complaints that cannot be resolved you may contact Dr. Shannon Fogg, Associate Dean for Academic Affairs (sfogg@mst.edu).