

PHY380 STATISTICAL MECHANICS

Instructor: Paul Saulnier. You may call me Paul.

Office: OHS 208 (507) 933-6123

Office Hours: MWF 9:00-9:50, TR 10:30-11:20, other times by arrangement.

Text: *Fundamentals of Statistical and Thermal Physics*, by F. Reif.

Recommended Reference: *Mathematical Handbook of Formulas and Tables*, by Murray R. Spiegel, Schaum's Outline Series. You won't find a better one for 3x the cost!

Classes: MWF 10:30-11:20 in OHS 216

Attendance: Regular class attendance is expected. If you miss a class for any reason you are responsible for the material covered during the class, including any assignments.

Homework: Homework will be assigned approximately every week. Late homework will be accepted at the discretion of the instructor, with loss of points. Homework should be your own work, however, collaboration is expected and encouraged.

Makeup: Missed exams may be made up at the discretion of the instructor only with prior notification.

Final Exam: Saturday, December 16th at 10:30-12:30 in OHS 216.

Coverage: We will be covering the following chapters in more or less detail.

Chapter 1 - Introduction to statistical methods

Chapter 2 - Statistical description of systems of particles

Chapter 3 - Statistical thermodynamics

Chapter 6 - Basic methods and results of statistical mechanics

Chapter 7 - Simple applications of statistical mechanics

Chapter 9 - Quantum statistics of ideal gases

Chapter 10 - Systems of interacting particles

Chapter 4 - Macroscopic parameters and their measurement (Less)

Chapter 5 - Simple applications of macroscopic thermodynamics

Chapter 8 - Equilibrium between phases or chemical species

Selected topics from Chapters 11, and 12 as/if time permits

<u>Evaluation:</u>	There will be three one-hour exams	3x20%
	One two-hour final exam	20%
	Homework	20%

Final course grades will be assigned using the following scale as a guide:

94-100	A	74-78	C+
90-94	A-	70-74	C
86-90	B+	66-70	C-
82-86	B	62-66	D+
78-82	B-	58-62	D
		0-58	F

Please note that these ranges are only guidelines. Final grades will also take into account the instructor's evaluation of the student's attendance, participation, and evidence of improvement or regression.

Instructor's Note: My job in this class is to help you learn Stat. Mech. I take this responsibility seriously and I would ask you to help me do my best. Specifically, I would encourage you to ask questions about the material during class and speak with me outside of class to discuss any course related concerns. Don't wait until the end of the semester to inform me of your concerns - by then it is too late. Your opinion is important to me.

Disability Services:

Gustavus Adolphus College is committed to ensuring the full participation of all students in its programs. If you have a documented disability, or you think you may have a disability of any nature (e.g., mental health, attentional, learning, chronic health, sensory, or physical) and, as a result, need reasonable academic accommodation to participate in class, take tests or benefit from the College's services, then you should speak with the Accessibility Resources staff, for a confidential discussion of your needs and appropriate plans. Course requirements cannot be waived, but reasonable accommodations may be provided based on disability documentation and course outcomes. Accommodations cannot be made retroactively; therefore, to maximize your academic success at Gustavus, please contact Accessibility Resources as early as possible. Accessibility Resources (<https://gustavus.edu/advising/disability/>) is located in the Center for Academic Resources and Enhancement. Accessibility Resources Coordinator, Kelly Karstad, (kkarstad@gustavus.edu or x7138), can provide further information.

Academic Honesty: By writing your name on any graded assignment for this class, you are attesting to the fact that it has been completed in accord with the college's academic honor policy. I take this responsibility seriously and I expect that you will also. If you have any doubt about what constitutes appropriate use of someone else's work, please ask.