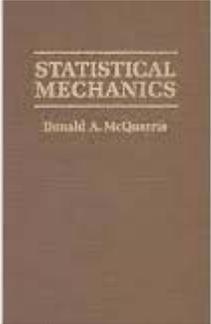


**THE UNIVERSITY OF TEXAS AT EL PASO
COLLEGE OF SCIENCE
DEPARTMENT OF PHYSICS**

Course #:	PHYS 5365 CRN 10989										
Course Title:	Advanced Statistical Mechanics										
Credit Hrs:	3.0										
Term:	Fall 2022										
Course Meetings & Location:	Tu & Th 9:00 AM – 10:30 AM, PSCI 218										
Prerequisite Courses:	-										
Course Fee: (if applicable)	-										
Instructor:	Dr. Felicia S. Manciu										
Office Location:	PSCI 221 B										
Contact Info:	Phone # : (915) 747 8472										
	E-mail address: fsmanciu@utep.edu										
	Fax #: (915) 747 5447										
	Emergency Contact: (915) 747 5715										
Office Hrs:	Tu & Th 11:00 AM – 12:00 PM										
Textbook(s), Materials:	<p>Main textbook: Statistical Mechanics, Donald A. McQuarrie, University Science Books, Sausalito, California, 2000.</p>										
Course Objectives (Learning Outcomes):	<p>The objective of the class is to provide students with a rigorous description of equilibrium systems whose particles are either independent or effectively independent, with the final goal of improving students' problem-solving abilities.</p> <p>We will study the following topics: Statistical Ensembles, Boltzmann, Fermi-Dirac, and Bose-Einstein Distributions, Ideal Gases, Classical Statistical Mechanics, and Quantum Statistics.</p>										
Grading Policy:	<p>Grades in this course will be based on your scores on two midterm exams, a final exam (comprehensive; but with emphasis on the last part of the course), and homework assignments.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Midterm exams:</td> <td>50%</td> <td>(25% each)</td> </tr> <tr> <td>Final exam:</td> <td>30%</td> <td>(comprehensive)</td> </tr> <tr> <td>Homework:</td> <td>20%</td> <td></td> </tr> </table>		Midterm exams:	50%	(25% each)	Final exam:	30%	(comprehensive)	Homework:	20%	
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Final exam:	30%	(comprehensive)									
Homework:	20%										

<p>Course Activities/Assignments:</p>	<p>Homework</p> <p>It is essential that students become well versed in problem solving methods, which means developing the writing skills to set up a problem, including diagrams and mathematical manipulation to achieve the final answer. A numerical score will be assigned for each homework set based on graded and counted problems.</p>
<p>Course Activities/Assignments:</p>	<p>Feel free to form study groups with your classmates and seek help from your lecture professor during her office hours as you attempt to solve the problems. Make sure that you understand the solutions and write them up yourself. <u>There is a strong correlation between homework scores and exam scores!</u></p> <p>Exams</p> <p>Exams will consist of problems similar to the worked examples in class and the assigned homework problems. <u>Exams will be open book but closed notes.</u></p> <p>The best way to prepare for the exams is to study the example problems and work out the assigned homework problems regularly. You should work as many additional problems from the text as you can; in this way you ensure the understanding of the material.</p>
<p>Make-up Policy:</p>	<p>An extension of the due date for the homework as well as the make-up of missing exams will be granted only in extraordinary circumstances.</p>
<p>Course Schedule:</p>	<p>CHAPTER 1 – <u>INTRODUCTION AND REVIEW</u></p> <p>CHAPTER 2 – <u>THE CANONICAL ENSEMBLE</u></p> <p>CHAPTER 3 – <u>ENSEMBLES & FLUCTUATIONS</u></p> <p>CHAPTER 4 – <u>BOLTZMANN, FERMI-DIRAC AND BOSE-EINSTEIN STATISTICS</u></p> <p>CHAPTER 5 – <u>IDEAL MONOATOMIC GAS</u></p> <p>CHAPTER 6 – <u>IDEAL DIATOMIC GAS</u></p> <p>CHAPTER 7 – <u>CLASSICAL STATISTICAL MECHANICS</u></p> <p>CHAPTER 10 – <u>QUANTUM STATISTICS</u></p>
<p>Attendance Policy:</p>	<p>Attendance is critical for your success in this class. Please notify me of any extenuating circumstances that may prevent your attendance. In the event of an absence, the student must make up and submit any missed work within one week from the absence. It is the student's responsibility to contact the professor immediately to find out how to make up any missing work.</p>

Military Statement:	If you are a military student with the potential of being called to military service and/or training during the course of the semester, you are encouraged to contact the instructor at the beginning of the semester.
Academic Integrity Policy:	Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones' own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) for possible disciplinary action. To learn more, please visit HOOP: Student Conduct and Discipline .
Netiquette:	Always consider audience. Respect and courtesy must be provided to classmates and to professor at all times. No harassment or inappropriate behavior will be tolerated. Remember that members of the class and the instructor will be reading any online postings. When reacting to someone else's message, address the ideas, not the person. Post only what anyone would comfortably state in a face-to-face situation. Blackboard is not a public internet venue; all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended for classmates and professor only. Please do not copy documents and paste them to a publicly accessible website, blog, or other space. If students wish to do so, they have the ethical obligation to first request the permission of the writer(s).
Accommodation Policy:	The University is committed to providing reasonable accommodations and auxiliary services to students and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the UTEP Center for Accommodations and Support Services (CASS) . Contact the Center for Accommodations and Support Services at 915-747-5148, or email them at cass@utep.edu , or apply for accommodations online via the CASS portal . The student is responsible for presenting to the instructor any accommodation letters and instructions.

COVID 19 Accommodations:	Students are not permitted on campus when they have a positive COVID-19 test, exposure or symptoms. Students who are considered high risk according to CDC guidelines and/or those who live with individuals who are considered high risk may contact Center for Accommodations and Support Services (CASS) to discuss temporary accommodations for on-campus courses and activities.
COVID-19 Precaution:	<p>You must STAY AT HOME and REPORT if you (1) have been diagnosed with COVID-19, (2) are experiencing COVID-19 symptoms, or (3) have had recent contact with a person who has received a positive coronavirus test. Reports should be made at screening.utep.edu. If you know of anyone who should report any of these three criteria, you should encourage them to report. If the individual cannot report, you can report on their behalf by sending an email to COVIDaction@utep.edu.</p> <p>For each day that you attend campus—for any reason—you must complete the questions on the UTEP screening website (screening.utep.edu) prior to arriving on campus. The website will verify if you are permitted to come to campus. Under no circumstances should anyone come to class when feeling ill or exhibiting any of the known COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, and alternative instruction will be provided. Students are advised to minimize the number of encounters with others to avoid infection. Wear face coverings when in common areas of campus or when others are present. You must wear a face covering over your nose and mouth at all times in this class. If you choose not to wear a face covering, you may not enter the classroom. If you remove your face covering, you will be asked to put it on or leave the classroom. Students who refuse to wear a face covering and follow preventive COVID-19 guidelines will be dismissed from the class and will be subject to disciplinary action according to Section 1.2.3 <i>Health and Safety</i> and Section 1.2.2.5 <i>Disruptions</i> in the UTEP Handbook of Operating Procedures.</p> <p>Please note that if COVID-19 conditions deteriorate in the City of El Paso, all course and lab activities may be transitioned to remote delivery.</p>
Course drop date:	October 28 th , 2022