

 FLORIDA ATLANTIC UNIVERSITY	COURSE CHANGE REQUEST Graduate Programs	UGPC Approval _____ UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner Posted _____ Catalog _____
	Department Physics College Charles E. Schmidt College of Science	
Current Course Prefix and Number PHY 6536	Current Course Title Statistical Mechanics	
<i>Syllabus must be attached for ANY changes to current course details. See <u>Guidelines</u>. Please consult and list departments that may be affected by the changes; attach documentation.</i> (none)		
Change title to: Change prefix From: To: Change course number From: To: Change credits* From: 4 To: 3 Change grading From: To: <small>*Review <u>Provost Memorandum</u></small>		Change description to: Change prerequisites/minimum grades to: (none) Change corequisites to: Change registration controls to: Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade.
Effective Term/Year for Changes: Fall 2019	Terminate course? Effective Term/Year for Termination:	
Faculty Contact/Email/Phone Chris Beetle <cbeetle@fau.edu> 7-4612		
Approved by Department Chair _____ College Curriculum Chair _____ College Dean _____ UGPC Chair _____ UGC Chair _____ Graduate College Dean _____ UFS President _____ Provost _____		Date 3/13/19 3/13/19 _____ _____ _____ _____ _____
<small>Digitally signed by Robert W. Stackman Jr DN: cn=Robert W. Stackman Jr, o, ou, email=stackma@fau.edu, c=US Date: 2019.03.13 08:29:03 -0500</small>		

Email this form and syllabus to UGPC@fau.edu one week before the UGPC meeting. **GRADUATE COLLEGE**

MAR 13 2019

Received

Syllabus

Course title: Statistical Mechanics

Course number: PHY 6536

Credit Hours: 3

Term: Spring 2018

Class Location and Time: SE 101, TR 12:00 - 1:50 PM

Instructor: Dr. Andy Lau

Office: SE 442

Office Hours: TR 2:00- 4:00 pm

Telephone: 297-3380

E-mail: alau@fau.edu

Course Description: Statistical Mechanics describes the collective behavior of 10^{23} number of particles. This course is a survey of the ideas and application of classical and quantum statistical physics.

Course Objectives: After completion of the course, a student should have developed a clear understanding of the physical principles and a mastery of the mathematical techniques in solving statistical physics problems. In addition, he or she is expected to gain the necessary competence in doing research.

Course Topical Outline:

Week 1: Review of Thermodynamics

Week 2-4: Probability theory

Week 5-7: Classical Statistical mechanics

Week 7-9: Interacting particles

Week 10-11: Quantum statistical mechanics

Week 12-14: Ideal quantum gases

Week 15: Fluctuations

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Method of Instruction: The format of the course will be lectures, reading assignments, and homework assignments.

Grading Procedure: Final grade will be decided from (1) scores from 5-6 homework assignments [20%], (2) a midterm exam (**Mar 2nd**) [20%], (3) a cumulative final exam [20%], and (4) a 20 minutes presentation (during the end of the semester) on a topic of student's choice, but it must be related to statistical physics [40%].

Grading: A: 100-93% A-:92-89% B+: 88-85% B: 84-80% B-: 79-76 %
C+:75-72% C: 71-68% C-:67-65% D+:64-60% D: 59-56%
D- : 55-50% F: <50%.

Policy on make-up tests and late work: If a student cannot attend an exam or hand in homework on time because of a legitimate problem, for example, because of a significant health, he or she can make up the respective assignment.

Required Texts: A large portion of the course material is covered in the book by R.K. Patheria and Paul D. Beale, *Statistical Mechanics*, 3rd Edition (Elsevier , New York, 2011.) If supplementary material is needed, this will be distributed in class.

Supplementary Texts:

P.M. Chaikin and T.C. Lubensky, *Principles of condensed matter physics* (Cambridge university press, New York, 2000.)

Mehran Kardar, *Statistical physics of particles*, Cambridge (2007).

James P. Sethna, *Statistical Mechanics, Entropy, Order Parameters, and Complexity*, Oxford (2006) .

Classroom etiquette policy: University policy on the use of electronic devices states: “In order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular telephones and pagers, are to be disabled in class sessions.”

Disability Policy Statement: In compliance with the Americans with Disabilities Act (ADA), students who require special accommodation due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) - in Boca Raton, SU 133 (561-297-3880); in Davie, MOD 1 (954-236-1222); in Jupiter, SR 117 (561-799- 8585); or at the Treasure Coast, CO 128 (772-873-3305) – and follow all OSD procedures.

Honor Code Policy Statement: Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty, including cheating and plagiarism, is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001 at http://www.fau.edu/ctl/4.001_Code_of_Academic_Integrity.pdf