

14/07/2019



# Statistical Mechanics

## 86-216-01

**Lecturer:** Dr. Stas Burov

**Course type:** Lecture + Practice

**Date:** 2019-2020

**semester:** A

**weekly hours:** 3L + 1P

### **Aim of the course:**

Class Objectives : Learning Statistical Mechanics.

### **Details of subjects to be covered:**

1. Fundamental Thermodynamics
2. Conditions for Equilibrium and Stability
3. Statistical Ensembles and Partition Function
4. Many Body, non-Interacting Systems
5. Modern Theory of Phase transitions
6. Monte-Carlo Methods
7. Classical Fluids
8. Statistical Mechanics of out of Equilibrium Systems

During the Class: The material will be presented by oral lectures and discussion with students.

### **Prerequisites:**

Thermodynamics and Statistical Mechanics I.

### **Course mandatories:**

Weekly home assignments and two quizzes during the semester.

### **Grading:**

Exam – 67%, home assignments – 11%, quizzes-22%.

Exam material: all material covered during lectures and practical training.

## **Bibliography:**

### **(Optional)**

Reif: Fundamentals of Statistical and Thermal Physics

Landau and Lifshitz: Statistical Physics

Callen: Thermodynamics