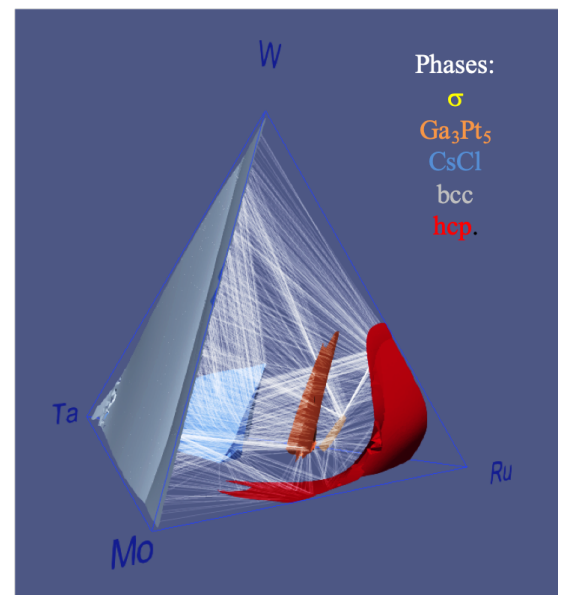
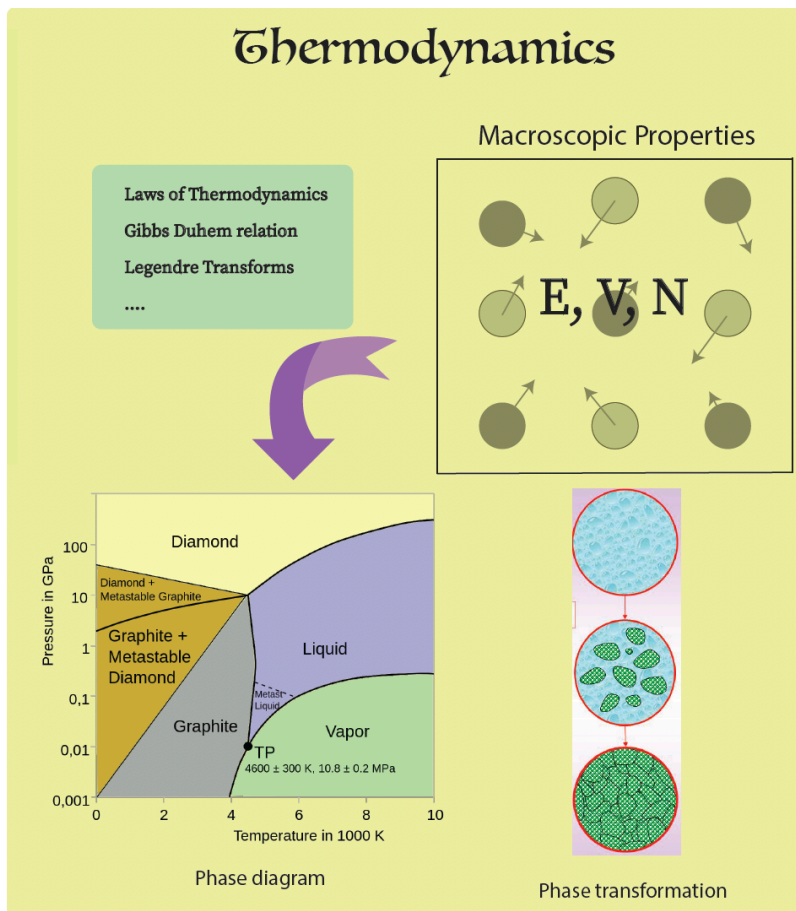


# Course Announcement

## CME 471: Thermodynamics of Materials

Instructor: Prof. Sara Kadkhodaei (Email: [sarakad@uic.edu](mailto:sarakad@uic.edu))

Meetings: Tuesday-Thursday 3:30-4:45PM, Lincoln Hall 315



Understanding the equilibrium properties of materials throughout the laws of thermodynamics is essential in a wide range of disciplines, e.g., physics, chemistry, materials science, chemical engineering, mechanical engineering, etc. In this course, we review the theory of thermodynamics and the foundations of materials stability through understanding the laws of thermodynamics. We study the application of laws of thermodynamics to equilibrium and properties of materials, which lays out the foundation to treat general phenomena in materials, including phase transformations, chemical reactions, magnetism, elasticity, etc.

In the first half of the course meetings, we explore the fundamental concepts and techniques of classical thermodynamics which provides us with the theoretical tools to study solid systems. In the second part of the course, we will study the application of the thermodynamic concepts to the analysis of phase equilibria, phase transformations, and phase diagrams starting from one-component until multicomponent systems. Finally, we will combine the theoretical tools discussed throughout the course to examine the thermodynamics properties of a real physical system via computational techniques including computer programs for thermodynamic modeling and phase diagram calculations (eg., ThermoCalc, Pandat).