

# Intro to USNCO Chemistry

Instructor: June Yin

Weekly Classes on Saturdays, 1:00 PM ET

## Course Description

This course is for students who have a very basic understanding of high school chemistry (if you don't, please watch videos from the "Introduction to High School Chemistry" course). The course is designed to introduce students to the first round of the US National Chemistry Olympiad, the Local Exam. Students will learn chemistry concepts and problem solving skills needed for the Local Exam, which reach around AP-level. Topics include thermodynamics, equilibrium, kinetics, electrochemistry, basic organic chemistry, and more. The instructor will review problems from previous Local Exams to reinforce what students learn.

## Meeting Agenda

Meeting 1: Stoichiometry, Descriptive Chemistry, and Lab

Meeting 2: Nomenclature, Significant Figures, and Dimensional Analysis

Meeting 3: Atomic Structure and Periodicity

Meeting 4: Bonding and Molecular Structure

Meeting 5: States of Matter - Gases, Liquids, and IMFs

Meeting 6: States of Matter - Solids, Phase Changes, and Solutions

Meeting 7: Thermodynamics- 1st Law

Meeting 8: Thermodynamics- 2nd and 3rd Law

Meeting 9: Chemical Equilibria

Meeting 10: Acids and Bases

Meeting 11: Applications of Aqueous Equilibria

Meeting 12: Electrochemistry

Meeting 13: Kinetics

Meeting 14: Coordination Complexes and Nuclear Chemistry

Meeting 15: Organic - Fundamentals

Meeting 16: Organic - Reactivity, Basic Reactions, and Bio