UC Davis Chem 110C Physical Chemistry III

The LibreTexts libraries are Powered by NICE CXOne and are supported by the Department of Education Open Textbook Pilot Project, the UC Davis Office of the Provost, the UC Davis Library, the California State University Affordable Learning Solutions Program, and Merlot. This material is based upon work supported by the National Science Foundation under Grant No. 1246120, 1525057, and 1413739.

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation nor the US Department of Education.

TABLE OF CONTENTS

Licensing

*A detailed breakdown of this resource's licensing can be found in **Back Matter/Detailed Licensing**.*

SECTION OVERVIEW

Unit I: Thermodynamics

UC Davis Chemistry Chemistry 110C

Physical Chemistry III: Thermodynamics, Equilbria and Kinetics

Chem 110A ● Chem 110B ● Chem 110C ● **Agenda ● Homework ● Worksheet Activities**

Sorry, but all current instructors at UCD use the commercial textbook for this course.

CHAPTER OVERVIEW

19: The First Law of Thermodynamics

CHAPTER OVERVIEW

20: Entropy and The Second Law of Thermodynamics

CHAPTER OVERVIEW

21: Entropy & the Third Law of Thermodynamics

CHAPTER OVERVIEW

22: Helmholtz and Gibbs Energies

SECTION OVERVIEW

Unit II: Phase Equilibria

UC Davis Chemistry Chemistry 110C

Physical Chemistry III: Thermodynamics, Equilbria and Kinetics

Chem 110A ● Chem 110B ● Chem 110C ● **Agenda ● Homework ● Worksheet Activities**

Sorry, but all current instructors at UCD use the commercial textbook for this course.

Phase equilibrium is the state of balance between multiple phases of a system. It a dynamic process that occurs when the transfer of matter or thermal energy from one phase to another phase is equal to the reverse direction rates.

CHAPTER OVERVIEW

23: Phase Equilibria

Phase equilibria is the term used to describe with two or more phases co-exist (in equilibrium). The stability of phases can be predicted by the chemical potential, in that the most stable form of the substance will have the minimum chemical potential at the given temperature and pressure. A key tool in exploring phase equilibria is a phase diagram which is used to show conditions (pressure, temperature, volume, etc.) at which thermodynamically distinct phases (such as solid, liquid or gaseous states) occur and coexist at equilibrium.

CHAPTER OVERVIEW

24: Liquid-Liquid Solutions

CHAPTER OVERVIEW

25: Solid-Liquid Solutions

SECTION OVERVIEW

Unit III: Chemical Equilibria

UC Davis Chemistry Chemistry 110C

Physical Chemistry III: Thermodynamics, Equilbria and Kinetics

Chem 110A ● Chem 110B ● Chem 110C ● **Agenda ● Homework ● Worksheet Activities**

Sorry, but all current instructors at UCD use the commercial textbook for this course.

Chemical equilibrium is the state in which both reactants and products are present in concentrations which have no further tendency to change with time. Usually, this state results when the forward reaction proceeds at the same rate as the reverse reaction.

CHAPTER OVERVIEW

26A: Thermodynamic Description of Chemical Equilibria

Topic hierarchy

CHAPTER OVERVIEW

26B: Statistic Description of Chemical Equilibria

Topic hierarchy

SECTION OVERVIEW

Unit IV: Kinetics

UC Davis Chemistry Chemistry 110C

Physical Chemistry III: Thermodynamics, Equilbria and Kinetics

Chem 110A ● Chem 110B ● Chem 110C ● **Agenda ● Homework ● Worksheet Activities**

Sorry, but all current instructors at UCD use the commercial textbook for this course.

Chemical reaction kinetics deals with the rates of chemical processes.

28: Chemical Kinetics I : Rate Laws

29: Chemical Kinetics II: Reaction Mechanisms

30: Gas-Phase Reaction Dynamics

CHAPTER OVERVIEW

28: Chemical Kinetics I : Rate Laws

CHAPTER OVERVIEW

29: Chemical Kinetics II: Reaction Mechanisms

CHAPTER OVERVIEW

30: Gas-Phase Reaction Dynamics

Index

D

Glossary

Sample Word 1 | Sample Definition 1

Detailed Licensing

Overview

Title: Chem 110C: Physical Chemistry III

Webpages: 26

Applicable Restrictions: Noncommercial

All licenses found:

- CC BY-NC-SA 4.0: 73.1% (19 pages)
- Undeclared: 26.9% (7 pages)

By Page

- Chem 110C: Physical Chemistry III - *CC BY-NC-SA 4.0*
  - Front Matter - *CC BY-NC-SA 4.0*
    - TitlePage - *Undeclared*
    - InfoPage - *Undeclared*
    - Table of Contents - *Undeclared*
    - Licensing - *Undeclared*
  - Unit I: Thermodynamics - *CC BY-NC-SA 4.0*
    - 19: The First Law of Thermodynamics - *CC BY-NC-SA 4.0*
    - 20: Entropy and The Second Law of Thermodynamics - *CC BY-NC-SA 4.0*
    - 21: Entropy & the Third Law of Thermodynamics - *CC BY-NC-SA 4.0*
    - 22: Helmholtz and Gibbs Energies - *CC BY-NC-SA 4.0*
  - Unit II: Phase Equilibria - *CC BY-NC-SA 4.0*
    - 23: Phase Equilibria - *CC BY-NC-SA 4.0*
    - 24: Liquid-Liquid Solutions - *CC BY-NC-SA 4.0*
    - 25: Solid-Liquid Solutions - *CC BY-NC-SA 4.0*
  - Unit III: Chemical Equilibria - *CC BY-NC-SA 4.0*
    - 26A: Thermodynamic Description of Chemical Equilibria - *CC BY-NC-SA 4.0*
    - 26B: Statistic Description of Chemical Equilibria - *CC BY-NC-SA 4.0*
  - Unit IV: Kinetics - *CC BY-NC-SA 4.0*
    - 28: Chemical Kinetics I : Rate Laws - *CC BY-NC-SA 4.0*
    - 29: Chemical Kinetics II: Reaction Mechanisms - *CC BY-NC-SA 4.0*
    - 30: Gas-Phase Reaction Dynamics - *CC BY-NC-SA 4.0*
  - Back Matter - *CC BY-NC-SA 4.0*
    - Index - *Undeclared*
    - Glossary - *Undeclared*
    - Detailed Licensing - *Undeclared*