



# Principles and Chemical Applications of Thermodynamics

## S20

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<b>COURSE OUTLINE</b>		
<b>COURSE DETAILS</b>		
S. No	Module ID/ Lecture ID	Lecture Title/Topic
1	L1	Introduction
2	L2	system, State and Equilibrium
3	L3	Mathematical Foundation: Exact differential
4	L4	Mathematical Foundation: Inexact differential
5	L5	First Law of Thermodynamics (Part - I)
6	L6	First Law of Thermodynamics (Part - II)
7	L7	First Law of Thermodynamics (Part - III), Work
8	L8	First Law of Thermodynamics (Part - IV), Internal Energy
9	L9	First Law of Thermodynamics (Part - V), Enthalpy
10	L10	First Law of Thermodynamics (Part - VI), Enthalpy(contd.)
11	L11	First Law of Thermodynamics (Part - VI), Enthalpy(contd.)

12	L12	Second Law of Thermodynamics (Part - I), Entropy
13	L13	Second Law of Thermodynamics (Part - II), Entropy
14	L14	Second Law of Thermodynamics (Part - III), Entropy
15	L15	Second Law of Thermodynamics (Part - IV), Entropy
16	L16	Spontaneity and Equilibrium (Part - I)
17	L17	Spontaneity and Equilibrium (Part - II)
18	L18	Maxwell's Relations (Part - I)
19	L19	Maxwell's Relations Part - II)
20	L20	Maxwell's Relations (Part - III)
21	L21	Fundamental Equation of Chemical Thermodynamics
22	L22	Open Systems Chemical Potential (Part - I)
23	L23	Open Systems Chemical Potential (Part - II)
24	L24	Open Systems Chemical Potential (Part - III)
25	L25	Phase Equilibrium (Part - I)
26	L26	Phase Equilibrium (Part - II)
27	L27	Phase Equilibrium (Part - III)
28	L28	Phase Equilibrium (Part - IV)
29	L29	Simple Mixtures (Part - I)
30	L30	Simple Mixtures (Part - II)
31	L31	Activity
32	L32	Chemical Equilibrium (Part - I)
33	L33	Chemical Equilibrium (Part - II)

34	L34	Chemical Equilibrium (Part - III)
35	L35	Chemical Equilibrium (Part - IV)
36	L36	Electrochemical Equilibrium (Part - I)
37	L37	Electrochemical Equilibrium (Part - II)
38	L38	Electrochemical Equilibrium (Part - III)
39	L39	Electrochemical Equilibrium (Part - IV)
40	L40	Electrochemical Equilibrium (Part - V)
41	L41	Electrochemical Equilibrium (Part - VI)

**References if Any:**