

UTKALMANI GOPABANDHU INSTITUTE OF ENGINEERING,
ROURKELA



LESSON PLAN

SESSION: 2025-2026

DEPARTMENT OF CERAMIC TECHNOLOGY

SUBJECT CODE: Th.4

NAME OF THE SUBJECT: THERMODYNAMICS AND CERAMIC SCIENCE-1

BRANCH: CERAMIC TECHNOLOGY

SEMESTER: DIPLOMA 3rd SEM

NUMBER OF CLASSES ALLOTTED PER

WEEK: 3

NAME OF FACULTY-KRUSHNAPRASAD

DASH

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			LESSON PLAN	
CERAMIC TECHNOLOGY		3RD	KRUSHNA PRASAD DASH, SR.LECTURER IN CERAMIC TECH.	
SUBJECT:		NO OF DAYS/ WEEK CLASS ALLOTTED:	SEMESTER FROM- 14.07.2025 TO 15.11.2025 NO OF WEEKS: - 18	
		03		

WEEK NO.	CLASS DAY	THEORY TOPICS
1 st	14-07-2025	Define different terms of thermodynamics system.
	15-07-2025	State ideal gas laws.
	16-07-2025	Determine workdone by compression and expansion of gases
2 nd	21-07-2025	Explain properties of steam(sensible latent heat and dryness fraction)
	22-07-2025	Discuss use of steam table.
	23-07-2025	Explain intensive and extensive properties.
3 rd	28-07-2025	Define and explain homogenous and heterogenous properties.
	29-07-2025	State and explain first law of thermodynamics
	30-07-2025	Explain similarities between heat and work
4 th	04-08-2025	Define internal energy
	05-08-2025	Define heat and work and derive interrelationship.
	06-08-2025	Define heat capacity and specific heat.
5 th	11-08-2025	Define adiabatic and isothermal process
	12-08-2025	Define heat of formation.
6 th	13-08-2025	Define heat of reaction.
	18-08-2025	Limitation in 1st law of thermodynamics
	19-08-2025	Explain the postulates of 2nd law of thermodynamics(Clausius statement, Kelvin- plank statement)
7 th	20-08-2025	Explain carnot cycle.
	25-08-2025	Explain absolute scale of temperature.
	26-08-2025	state and explain free energy.
8 th	01-09-2025	Define entropy and chemical potential
	02-09-2025	state importance of thermodynamics in ceramic industry.
9 th	03-09-2025	State and explain 3rd law of thermodynamics.
	08-09-2025	Define phases, component, degree of freedom
	09-09-2025	Phase diagram of pure substance phase rule.
10 th	10-09-2025	Binary eutectic phase diagram, binary isomorphous phase diagram, lever rule
	15-09-2025	One component system SiO_2 , Three component system
	16-09-2025	Two component system like Al_2O_3-SiO_2, CaO-MgO and MgO-Al_2O_3 system
11 th	17-09-2025	Three component system
	22-09-2025	Explain importance of phase diagram and its application

	23 -09-2025	Define and classify colloids
12 th	24-10-2025	State and explain different method of preparation of colloids.
13 th	06 -10-2025	Application of colloids in ceramic and other areas
	08 -10-2025	Base exchange capacity,flocculation deflocculation and clay water system.
14 th	13-10-2025	Introduction to thertmogravimetric analysis.
	14-10-2025	Basic idea on thermal method of analysis.
	15-10-2025	State and explain spectroscopy and describe various about photo electric spectrophotometer .
15 th	20-10-2025	State beers law and describe its application
	22-10-2025	Visible spectrometry colorometric and spectrophotometric analysis.
16 th	27-10-2025	Discuss different application of spectrophotmetry
	28-10-2025	Description of atomic absorption spectroscopy
	29-10-2025	Introduction of DTA
17 th	03-11-2025	Introduction of TGA
	04-11-2025	Introduction of XRD and XRF
	10-11-2025	Internal examination