UTKALMANI GOPABANDHU INSTITUTE OF ENGINEERING, ROURKELA

DEPARTMENT OF CHEMICAL ENGINEERING

LESSON PLAN

Semester-5th

SUBJECT- Th. 2 MASS TRANSFER – II

PREPARED BY- ER. RAJESH TRIPATHY

	Topics covered
WEEK 1	Wet and dry bulb temperature
	The principle of wet blub temperature theory
	Illustrate humidity chart and
	explain different methods of measurement of Humidity
WEEK 2	Different methods of humidification and dehumidification
	The construction and working of natural and mechanical draft cooling tower.
	Solve simple problems
	Solve simple problems
WEEK 3	Define drying Moisture content-equilibrium, unbound, free moisture
	The methods of removing liquids from solids
	Illustrate constant rate and falling rate period (simple problems)
	The construction and working principle of tray dryer, rotary dryer,.
WEEK 4	spray dryer, tunnel dryer, flash dryer,
	fluidized bed dryer, dryer for heat sensitive materials
	Solve simple problems
	Solve simple problems
WEEK 5	Liquid extraction and leaching
	Student interaction
	Solve simple problems
	Solve simple problems
WEEK 6	Different types of extraction

	Student interaction
	The principle of solid liquid extraction
	Student interaction and doubt clear
WEEK 7	Batch and continuous leaching, Solid-Liquid extraction equipments
	Batch and continuous leaching, Solid-Liquid extraction equipments
	The principal of liquid-liquid extraction
	The principal of liquid-liquid extraction
WEEK 8	The parameter in choice of solvent for liquid-liquid extraction
	Construction and working principle of liquid-liquid extraction equipment and solid liquid extraction equipment
	Construction and working principle of liquid-liquid extraction equipment and solid liquid extraction equipment
	Construction and working principle of liquid-liquid extraction equipment and solid liquid extraction equipment
WEEK 9	Solve simple problems
	Define crystallization
	Principle of crystallization
	Student interaction and doubt clear
WEEK 9	Construction and working of different types of batch and continuous crystallizer
	Construction and working of different types of batch and continuous crystallizer
	spray dryer, tunnel dryer, flash dryer,
	spray dryer, tunnel dryer, flash dryer,
WEEK 10	Different methods of humidification and dehumidification
	Different methods of humidification and dehumidification
	Different methods of humidification and dehumidification
	Different methods of humidification and dehumidification
WEEK 11	The methods of removing liquids from solids
	The methods of removing liquids from solids
	The methods of removing liquids from solids
	The methods of removing liquids from solids
WEEK 12	Different types of extraction
	Different types of extraction

	Different types of extraction
	Different types of extraction
WEEK 13	Construction and working principle of liquid-liquid extraction equipment and solid liquid extraction equipment
	Construction and working principle of liquid-liquid extraction equipment and solid liquid extraction equipment
	fluidized bed dryer, dryer for heat sensitive materials
	fluidized bed dryer, dryer for heat sensitive materials
WEEK 14	Principle of crystallization
	Principle of crystallization
	Principle of crystallization
	Principle of crystallization
WEEK 15	Batch and continuous leaching, Solid-Liquid extraction equipments
	Batch and continuous leaching, Solid-Liquid extraction equipments
	Batch and continuous leaching, Solid-Liquid extraction equipments
	Batch and continuous leaching, Solid-Liquid extraction equipments

BOOKS FOR REFERENCE:

Sr no	Name of Author	Title of Book	Name of Publisher
1	Treybal.	Mass transfer operation	Tata Mc Grawhill
2	Mc Cabe & J M Smith	Unit operation of Chemical Engineering	Tata Mc Grawhill
3	Badgero and Banchero	Introduction to Chemical Engineering	Tata Mc Grawhill
4	K Gavane	Unit operations II	Nirali Publication
5	Richardson & Coulson	Chemical Engineering Vol-2	Tata Mc Grawhill

	Prepared by	Approved by
Signature	16/07/2025	16/07/2025
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Designation	**Senior Lecturer**	**I/C HOD,Chemical.**
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