Lesson Plan

Name of Faculty : V.N.JHA
Discipline : Ceramic Engg.
Semester : 3rd
Subject : **Ceramic Machinieries**
Lesson Plan Duration :
Work Load (Lecture /Practical) per week in hours: Lecture : 3 Practical 2

Week	**Theory**		**Practical**	
	Lecture Day	**Topic (Including assignment/test)**	**Practical Day**	**Topic**
1st	1	Introduction to subject	1	To grind a given sample in ball mill.
	2	Size Reduction: Selection of crushing & grinding equipment.		To grind a given sample in ball mill.
	3	Description of closed and open circuit operations.		
2nd	4	Classification of size reduction machinery. Crushers: Introduction, single and double toggle jaw crushers,	2	To study the operation of crushers.
	5	Gyratory crushers, Crushing rolls and hammer mills, edge runner etc.		To study the operation of crushers.
	6	Grinding: Introduction, pan grinding, ring roll mills, ball mills,		
3rd	7	pot mills, pebble mill, rod and tube mills, cylindrical ball mill,	3	To study the operation of magnetic separator.
	8	conical mills, ball tube mills and their parts, quantity of balls,		To study the operation of magnetic separator.
	9	size of balls. Factors affecting grinding efficiency.		
4th	10	quantity of balls, size of balls. Factors effecting grinding efficiency (Assignment of Unit -1)	4	To filter the flow of slip through filter press.
	11	Size Separation Wet classifiers, Air, Electromagnetic / magnet separators, vibrating sieve,		To filter the flow of slip through filter press.
	12	slip lifting & Diaphragm pump, Filter press, Vacuum filter, Centrifugal De-watering.		
5th	13	Mixing and Body Making De-airing single and double arc pug mills and plugging equipment. Extruders, kneading equipment,	5	Demonstration of operation of jigger and jollying machine.
	14	wet pan mill, muller mixer, ribbon mixer, blunger, agitator etc.		Demonstration of operation of jigger and jollying

				machine.
	15	Assignment Unit -2		
6th	16	Revision Unit -2		
	17	Shaping Machine Potters wheel, Jigger & Jolly, Batting machine, Semi & fully automatic jiggers,	6	Demo of operation of pressing machine with pressing parameters.
	18	Roller machines, Extrusion wire cutting machines		Demo of operation of pressing machine with pressing parameters.
7th	19	Pressing Machines Important parameters of pressing (Die, Powder & Pressure),	7	Demo of operation of vibrating machine.
	20	Screw press, friction press, Hydraulic press, vibratory compaction machine		Demo of operation of vibrating machine.
	21	Isostatic press, Hot isostatic press (HIP), Injection moulding, Tape casting,		
8th	22	Assignment Unit -3	8	Demo of operation of Blunger machine.
	23	Revision Unit 3		Demo of operation of Blunger machine.
	24	Dryers Unheated Dryers, Heated Dryers,		
9th	25	Batch Dryers, Chamber and Corridor dryers.	9	Demo of operation of Agitator machine.
	26	Humidity dryers, Continuous dryers, Tunnel dryers.		Demo of operation of Agitator machine.
	27	Kilns : Tunnel kiln (Roller hearth Kiln, Slab Kiln),		
10th	28	Shuttle Kiln	10	Study of natural and artificial drying.
	29	Material Handling Equipment: Portable power driven machines,		Study of natural and artificial drying.
	30	permanent installations, flight, belt & screw conveyors,		
11th	31	conveying through pipes, slurry pumps, bucket elevator.	11	Demo of autoclave machine.
	32	Assignment Unit -4		Demo of autoclave machine.
	33	Revision Unit -4		
12th	34	Testing Equipment Vicat apparatus, Le-Chatlier apparatus,	12	Practice maintaining firing schedule in lab furnace

	35	Fired MOR testing machine,		Practice maintaining firing schedule in lab furnace
	36	Autoclave machine,		
13th	37	abrasion testing machine,		
	38	Infrared moisture balance,		
	39	Impact testing machine (Izod and Ball type)		
14th	40	Maintenance of Machineries: Concept of Preventive maintenance,		
	41	Maintenance of Machineries: Concept of Predictive maintenance.		
	42	Maintenance of Machineries: Concept of Break down maintenance.		
15th	43	Schedule of maintenance.		
	44	Assignment Unit -5		
	45	Revision Unit 5		