

Name of the Faculty : DAVENDER KUMAR
Semester & Discipline : 5th (AGRICULTURE ENGINEERING)
Subject : Agro Process Engineering
Lesson plan duration : 16 weeks (from September, 2020 to December, 2020)
Work load (lecture/practical) per week (in hours): lectures-05, practical- 03

Week	Theory		Practical	
	Lecture day	Topics (Including assignment/test)	Practical day	Topic
1 st	1 st	Introduction of Agro Process Engg.	1 st	Study of different materials handling equipment
	2 nd	Introduction and principles of seed processing		
	3 rd	Steps in processing and flow diagram showing various steps/operations in processing.		
	4 th	Machine used in processing of seeds of cereals, pulses and cotton e.g. elevators		
	5 th	Conveyors and types		
2 nd	6 st	Revision	2 nd	. Study of operation and adjustments of air screen cleaner-cum-grader
	7 nd	Different types of cleaners and graders viz. air screen cleaner-cum-grader		
	8 rd	Disc separators, Indented cylinders		
	9 th	Spiral separators, Specific gravity separators,		
	10 th	Pneumatic separators, Magnetic separator		
3 rd	11 th	Inclined draper and Belt type electrostatic Separators	3 rd	Study of operation and adjustment of specific gravity separator
	12 th	Revision		
	13 th	Process of mechanical delinting of cotton seeds		
	14 th	Acid delinting of cotton seeds		
	15 th	Layout and plan of seed processing plant		
4 th	16 th	Different types of Seed treaters		Revision
	17 th	Calibration of seed treaters		
	18 th	Revision		
	19 th	Paddy grain structure		
	20 th	Paddy cleaning, pre milling treatment		
5 th	21 th	Parboiling ; basic concept and principles	4 th	Study of different types of dryers. Study of operation and adjustment of indented cylinder.
	22 th	Method of parboiling; traditional method		
	23 th	Single boiling , double boiling method		
	24 th	RPEC and sodium chromate method.		
	25 th	Revision		
6 th	26 th	Rice milling process: flow chart of modern rice mill		Revision
	27 th	Deshelling operations of paddy. Under runner disc sheller		
	28 th	Rubber roller sheller and hullers		
	29 th	Whitening, polishing and grading.		
	30 th	Revision		
7 th	31 th	Construction and operation of rubber roll sheller	5 th	Visit to a seed processing plant.
	32 nd	Vertical cone rice whitener		
	33 rd	Horizontal rice whitener		
	34 th	Utilization of the by-products of rice mill		
	35 th	Revision		
8 th	36 th	Important unit operations of pulse milling: cleaning,	6 th	Visit to rice milling industry for the study of parboiling
	37 th	Conditioning, Polishing and Grading		
	38 th	Pulse milling process: domestic level process,		

	39th	Commercial level process.		and rice milling equipment
	40th	Revision		
9th	41st	Pulse milling method : Wet milling Process		Revision
	42nd	Dry milling Process		
	43rd	Factors affecting pulse milling out turn : Grain parameters		
	44th	Machine parameters		
	45th	Revision		
10th	46th	Introduction to flour milling	7th	Visit to a Dall mill and study the operations.
	47th	Steps in wheat milling, receiving ,drying and storage.		
	48th	Cleaning, conditioning, milling into flour and by product,		
	49th	Packaging and Blending		
	50th	Revision		
11th	51st	Introduction to Processes of oil milling		Revision
	52nd	Unit operations in oil mills		
	53rd	Oil expression and extraction		
	54th	Mechanical expression devices such as Ghani		
	55th	Revision		
12th	56th	Principal of operation of Hydraulic press.	8th	Visit to flour mill and study of machinery and processes used in flour milling.
	57th	Principal of operation of Screw press		
	58th	Principle and concepts of solvent extraction.		
	59th	Revision		
	60th	Introduction to various animal feeds		
13th	61st	Sources of raw material of animal feed	9th	Visit to oil-mill and solvent extraction plant.
	62nd	Machines used for grinding of animal feed		
	63rd	Blending, mixing		
	64th	Revision		
	65th	Evaluation of assignment		
14th	66th	Pelleting of feed ingredients	10th	Visit to animal feed plant and study of machines used in feed mill
	67th	Lay out of animal Feed plant.		
	68th	Plan of animal feed plant.		
	69th	Evaluation of assignment		
	70th	Revision of different conveyors and elevators		
15th	71st	Revision of different cleaners and Graders		Revision
	72nd	Revision of modern parboiling methods		
	73rd	Revision of traditional parboiling methods		
	74th	Revision of Pulse milling methods		
	75th	Revision of Oil expression and Extraction and equipment's used		
16th	76th	Revision of Different types of cleaners and graders viz. air screen cleaner-cum-grader		Revision
	77th	Revision of Important unit operations of pulse milling		
	78th	Revision of Steps in wheat milling		
	79th	Revision of Unit operations in oil mills		
	80th	Revision of Machines used animal feed processing		