Lesson Plan

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| **Learning Outcomes** | **Course Content** | **Teaching/Learning****Strategy** | **Assessment Strategy** |
| ·         Students will be able to know about yarn and their properties. Students will understand the difference between different types of yarn.·         They will be able to learn how yarn are produced and about various spinning system.·         Students will know the process flow chart of different spinning system. | **Introduction:**Yarn and classification of yarn.Spinning systems and properties of different types of yarns.  | Lecture, Discussion  and showing real pictures | Q/A, MCQ Class test |
| ·         Students will learn which fiber properties should be considered before starting the yarn preparation.·         Place value of different fiber properties for different spinning systems·         They also learn about mixing and blending.·         The students will able to learn the bale management. | **Fiber properties:** Important fiber properties which influences spinning process. Fiber grading on the basis of different characteristics. Importance of mixing and blending. Bale management and procedure of bale management. | Lecture, Discussion exercise etc. | Q/A, MCQ, Class test |
| ·         After completing this chapter students will learn about blow room and the basic operation of blow room.·         They will be familiarized with the different blow room line used in spinning mills and suitable blow room line for different fibre types.·         By going through in the middle of the chapter students will learn about the working principle different machine of blow room and their possible settings.·         Finally the will able to calculate the cleaning efficiency and possible solution of different faults of the blow room machineries. | **Blow Room:**Basic operation of blow room (Opening, cleaning, mixing/blending, lap preparation or chute feed system).Study of Blow Room Machines for Blending, Opening, Cleaning and control of regularity of mass per unit length, Extraction and control of waste, Settings for waste, Blow room lines for different purposes, use of suitable sequences of machines, Production of scutcher laps, Advantages and disadvantages of chute feeding to cards, Safety; Prevention of fires, methods of extraction of metal objects, Main setting, Speeds, Production and cleaning efficiency calculation. | Lecture, Discussion, Problem, Exercise, Calculation | Q/A, MCQ, problems solving, Assignment Class test |
| ·         In this chapter the students will learn about the basic of carding machine and different types of carding machines.·         They will learn about the different actions like stripping action, doffing action, carding action, grinding action and coiling mechanism.·         Besides these, the students will be able to fix the different    setting of the carding machine as well as find out the problems.·         Finally the students will calculate the cleaning efficiency, NRE% and production in a given time. | **Carding:**Principles and objects of carding; Detailed study of the revolving flat card, Types and care of wire, Stripping and Grinding, doffing mechanism; Extraction and control of waste and dust, Can coiling, Speeds, Productions, Settings, Cleaning efficiency, Control of neps and NRE% and fibre damage, Variation in sliver mass per unit length. Recent developments of carding machine.  | Lecture, Discussion, solving practical Problems, Mathematical Problems etc.. | Q/A, MCQ, problems solving, Assignment Class test |
| ·         In this chapter the students will learn about the basic of draw frame and working procedure of draw frame.·         They will learn about the different actions like doubling, drafting, drawing and their effects on sliver quality.  ·         Besides these, the students will be able to fix the different    setting of the draw frame as well as find out the problems.·         From here they will be capable to distinguish the quality of drawn sliver and carded sliver.·         Finally the students will learn to find out the production in a given time and techniques to avoid variations in slivers. | **Draw Frame:**objects of draw frame and working principle of draw frame. Importance of draw frame in ring spinning system.  Principles of roller drafting; Drafting forces; Fibre control; Drafting wave and effect of short fibres and fibres with hooked ends created in carding, Mechanical faults causing periodic variation. Minimum theoretical variation, Effects of doubling and drafting. Study of draw frame, Drafting systems Stop mechanisms, Can coiling, Roller setting, Production, Introduction to auto levelers.  | Lecture, Discussion, solving practical Problems, Mathematical Problems etc. | Q/A, MCQ, problems solving, Assignment Class test |
| ·         By completing this chapter the students will gather knowledge about the spinning of long staple fibres.·         They also learn some technique to prepare the fibre for spinning like batch preparation, emulsion preparation, softening etc. | **Long Staple:**Flow charts for production of yarns from bast fibres, Woolen and worsted and silk, Processing of Jute; Importance and methods of batching and batch selection, Emulsion preparation of application, Softening technique and machinery, Treatment of cuttings.  | Lecture, Discussion, solving practical Problems, Mathematical Problems etc. | Q/A, MCQ,  problems solving, Assignment, Class test |
| ·         In this chapter the students will learn about the basic of jute carding machine and  breaker and finisher carding machine.·         They will be able to set the machine according to the requirements.·         The students will learn how to calculate the cleaning efficiency and production of jute carding machine.   | **Jute Carding:**Principles and objects of Jute card; Detailed study of carding systems and machinery, Methods of spreading, Differences in treatment on breaker and finisher cards, pinning, control of opening and waste, Cleaning efficiency, Settings, Speeds and productions. | Lecture, Discussion, solving practical Problems, Mathematical Problems etc. | Q/A, MCQ, problems solving, Assignment Class test |