GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN TEXTILE MANUFACTURING TECHNOLOGY

Semester: 4

Subject Name YARN MANUFACTURING TECHNOLOGY – II

Sr.No	Course content
1.	**Comber machine** 1.1 Combing preparation 1.1.1 Requirements of the card with respect to combing. - Fibre configuration insliver-nep level - card sliver purity - Card sliver evenness 1.1.2 Requirements of the draw frame with respect to combing. - Predrawing - combing preparation - Post drawing combing process 1.1.3 Requirements of unilap. 1.2 Detail study of super lap former. 1.3 Objects of combing, value of combing. 1.4 Detail study of cycle of operation in comber. 1.5 Brief study of following motion in comber. - Feeding, nipping, combing (cylinder combing & top combing)detaching. 1.6 Performance of comber. 1.6.1 Waste extraction & its control - waste setting. 1.6.2 Comber defects: their causes & remedies. 1.7 Routine maintenance of comber. 1.8 Significant developments in combing. 1.8.1 Cylinder clothing 1.8.2 Increase in nips per minute 1.8.3 Optimizing lap strength 1.8.4 Clamping line distance 1.8.5 Concentric nipper movement 1.8.6 Safety measures.
2.	**Speed frame** 2.1 Objectives 2.2 Detail study of can fed inter 2.2.1 Passage of material 2.2.2 Function of important parts 2.2.3 Principle of twisting & winding 2.2.4 Building motion 2.2.5 Different modern drafting system - SKF series - Sussen 2.2.6 Principle of differential motion 2.2.7 Tweedles pattent differential motion

	2.3 Design change in Speed frame. 2.3.1 Drafting - three roller drafting, four roller drafting. 2.3.2 Twisting 2.3.3 Building motion 2.3.4 Drive system 2.3.5 Other features - Creel, Package size, Roving tension control, Roving tension sensor, Flyers, Suctions, Online monitoring, Inverter drive, Safety measures
3.	**Ring frame.** 3.1 Objects & passage of material, function of important parts. 3.2 Function of traverse motion & detail study of traverse motion. 3.3 Principle of twisting and winding. 3.4 Different types of rings - flange ring - PSM ring - Antiwedge ring - Self lubricated ring - Orbit Ring 3.5 Detail study of traveller. - function of traveller - different types of travellers 3.6 Detail study of ring frame spindle. - roller bearing spindle - new era spindles 3.7 Detail study of drafting system. - function of drafting system - roller inclination - different drafting systems SKF - 3 roller Top Arm Drafting system. 3.8 Yarn ballooning & its control 3.9 Detail study of cop building mechanism 3.10Different yarn faults & package faults in Ring frame, their causes and remedies. - end breaks on one side of ring frame, both side of ring frame, group of ring frame - individual yarn breaks - slub in yarn - spinner's double - havyness in yarn - Soft ring bobbin - bad shaped ring bobbin 3.11 Environmental aspect of spinning department
4.	**4 Doubling** 4.1 Objects of doubling 4.2 Different doubling systems - Direct from ring bobbin - From cone wonper

	4.3 Different threading systems in doubling for dry & wet doubling 4.4 Detail study of ring, traveler & spindles 4.5 Production of doubled yarn - Sewing thread - Tyre cord yarn - Embroidery - Grandrile yarn 4.6 Production of fancy yarn - Snarls yarn - Loop yarn - Slub yarn - Flake yarns - Spots yarn - Milange Yarn
5.	**Waste spinning** 5.1 Different types of waste & their uses 5.2 Blow room line for waste spinning 5.3 Brief Study of : - Willow opener - Hard waste opener - Roving waste opener - Thread extractor - Roller & clearer cord - Chappon spinning - Nova cotania
6.	**Production calculation for Comber ,Speed frame, Ring Frame and Doubling.** 6.1 Calculate draft, twist & production of Speed frame. 6.2 Calculate draft & production of Comber. 6.3 Twist & draft calculation for ring frame 6.4 Production calculations for ring frame 6.5 Production calculations for doubling

LABORATORY EXPERIENCES:

SR.NO.	NAME OF TOPIC/EXERCISE
1	Lap preparation for comber (super lap former)
2	Passage of cotton through Comber
3	Combing cycle
4	Nipper motion on comber
5	Setting between cushion plate and B.S.D.R.
6	Detaching roller drive
7	Passage of sliver / rove in C.F.I.
8	Gearing diagram of Fly frame m / c.
9	Builder motion in fly frame m/c.
10	Tweedles patent Differential motion for fly frame m/c.
11	Passage of material through Ring frame
12	Gearing Diagram of Ring Frame
13	Drafting system
14	Ring and traveler setting
15	Cop building motion
16	Passage of Doubling
17	Setting of driving of doubling
18	Sketch of Threading systems
19	Passage of Novocotonia
20	Passage of roving waste opener