

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**DIPLOMA IN TEXTILE MANUFACTURING TECNOLOGY**  
**SEMESTER: V**

Subject Name: **Modern Spinning Technology**

<b>Sr. No.</b>	<b>Course content</b>
1.	<p><b>Introduction to Open-end spinning.</b></p> <p>1.1 Limitation of ring spinning.            1.2 Principle of open end spinning.            1.3 Advantages of open end spinning            1.4 Basic methods of O.E. spinning</p> <ul style="list-style-type: none"> <li>- Vortex assembly</li> <li>- Axial assembly</li> <li>- Discontinuous assembly</li> <li>- Friction spinning</li> <li>- Rotor spinning</li> </ul> <p>1.5 Outline of various spinning systems and properties of yarn.</p> <ul style="list-style-type: none"> <li>- Airjet spinning</li> <li>- Cover spinning</li> <li>- Twistless spinning (Bobtex, Twillo, Faciated)</li> <li>- Siro-spinning</li> <li>- Self twisted</li> </ul>
2.	<p><b>Rotor spinning.</b></p> <p>2.1 Introduction to development of Rotor spinning.            2.2 Principles of operation.            2.3 Sliver preparation for open end spinning.            2.4 Functions of important parts of the Rotor spinning machine.            2.5 Explain fibre opening, fibre transfer &amp; twist-insertion.            2.6 Detail study of rotor.            2.7 Properties of Rotor spun yarn.            2.8 Advantages and disadvantages of Rotor spun yarn.            2.9 General features of modern rotor spinning machine.            2.10 Calculation for production, draft &amp; twist</p>
3.	<p><b>Friction spinning.</b></p> <p>3.1 Principle of operation.            3.2 Different types of friction spinning machines : (Dref-I, Dref -II, Dref-III, P.S.L.)            3.3 Properties of friction spun yarn.</p>
4.	<p><b>Modern developments in Blow room to Ring frame.</b></p> <p>4.1 Chute feed system.            4.2 Auto leveler in Card &amp; Draw frame.            4.3 Developments in B.R., card, draw <b>frame</b>, comber, speed frame &amp; ring frame -Ring can system.</p>
5.	<p><b>Processing of Polyester on conventional spinning</b></p>
6.	<p><b>Use of Information Technology in Spinning</b></p>

## **Laboratory Experiences:**

1. Introduction of Open end spinning & Limitation of Ring frame.
2. Study of different open end Systems.
3. Principle of Air jet spinning & brief study.
4. Study of filament wrap spinning & Self twisted yarn.
5. Study of Siro spinning & Twistless spinning.
6. Detailed study of Rotor spinning.
7. Modern development in spinning.
8. Study of Tow to Top conversion.
9. Rotor calculation (Pro'n, TPI, & back doubling & Draft).
10. Industrial visit report.

## **Reference Books:**

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|---------------------------------------|---------------------|
| 1. Spun Yarn Technology               | - Oxtoby            |
| 2. Open-End Spinning                  | - Hield             |
| 3. Short Staple Spinning              | - vol. I-VI W.Klein |
| 4. NCUTE Programme                    | - manuals ---       |
| 5. Latest Machine Manuals Of Spinning | -                   |
| 6. Open-End Spinning                  | - W.Klein           |