



# GUJARAT TECHNOLOGICAL UNIVERSITY

**Bachelor of Engineering**

**Subject Code: 3172915**

**Semester: VII**

**Subject Name: Production Planning in Textile**

**Type of course** : Professional Elective Course

**Prerequisite** : Students should have basic knowledge of textile processes and machineries.

**Rationale** : Production planning of different departments of yarn and fabric formation is very important in textile industries to deliver the final product in time to the customer.

### Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ESE (E)	PA (M)	ESE (V)	PA (I)	
3	0	4	5	70	30	30	20	150

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

### Content:

Sr. No	Content	Total Hrs
1	Introduction to production planning for ring spun yarn - Carded and Combed variety.	2
2	Production calculation and planning of ring frame, speed frame, draws frame, comber, carding and blow room. Preparation of Spin Plan and Production schedule for Carded and Combed yarn Variety.	9
3	Preparation of spin plan and production schedule for OE spinning. Production calculation and planning for OE Spinning system.	5
4	Preparation of spin plan and production schedule blended yarn. Production calculation and planning for blended yarn spinning.	5
5	Introduction to production planning for weaving department. Preparation of Production Schedules for warp and weft yarns for shuttle and shuttle less looms. Production calculation of winding, warping, sizing and pirn winding departments. Production planning for the weaving department. Multi sort working in the weaving shed, allocation of looms. Formula for reed and ends calculation. Production calculation for shuttle and shuttleless weaving machines.	9
6	Formula for reed and ends calculation. Production calculation for shuttle and shuttleless weaving machines.	3
7	Production planning for the knitting, texturising & TFO.	3
8	Theory of maintenance. Various types of maintenance. Maintenance check points for all departments from Blow room to loom shed.	3
9	Elements of costing - capital cost, running cost, cost /kg calculation for yarn, cost per meter calculation for fabric. Depreciation and its calculation – straight line method, reducing balance method, sum of years digit method.	3

**Suggested Specification table with Marks (Theory): (For BE only)**



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<b>Distribution of Theory Marks</b>					
R Level	U Level	A Level	N Level	E Level	C Level
10	10	20	15	15	0

**Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)**

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

### Reference Books:

1. Management of Textile Industry, Dr. V. Dudeja, 1981.
2. Textile Project Management by A. Ormerod, The Textile Institute Publication, 1992.
3. Norms for Process Parameters, Productivity etc. ATIRA, BTRA, SITRA, NITRA.
4. Management of Textile Production, A. Ormerod. Newnes – Butter Wortrs Publication, 1979.
5. Weaving Calculations- Sengupta, 1959.
6. Spinning Calculations - H.V.Sreenivas Murthy, 1961.

### Course Outcomes:

Sr. No	CO Statement	Marks % weightage
CO - 1	Carry out production calculation of all spinning and weaving machines.	20
CO - 2	Prepare production schedule for spinning and weaving department.	20
CO - 3	Calculate number of machines required as per production schedule.	20
CO - 4	Prepare Spin plan and Weave plan for department.	20
CO - 5	Carry out Maintenance of various spinning and weaving machines.	10
CO - 6	Work out cost of yarn and fabric	10

### List of Practical:

1. Prepare spin plan for cotton spinning unit.
2. Prepare layout of spinning unit.
3. Prepare maintenance schedule for a cotton spinning unit.
4. Prepare layout of yarn preparatory unit.
5. Prepare weave plan for weaving unit having automatic looms.
6. Prepare weave plan for weaving unit having shuttleless looms.
7. Prepare maintenance schedule for a weaving unit.
8. Prepare layout of weaving unit having automatic looms.
9. Prepare layout of weaving unit having shuttleless looms.
10. Prepare project report for a spinning unit.
11. Prepare project report for a weaving unit.
12. Prepare project report for a knitting unit.

**List of Open Source Software/learning website :** Any Search Engine, NPTEL, Swayam portal etc.