

Hemchandracharya North Gujarat University, Patan

# **Bachelor of Vocation**

Programme on  
Textile and Ginning Technology

**Offered at**

Pramukh Swami Science and H.D. Patel Arts College  
Sarva Vidyalaya Campus, Kadi

## **Preface**

The University Grants Commission (UGC) has launched a scheme on skills development based higher education as part of college/university education, leading to setting up of Bachelor of Vocation (B.Voc) to serve multiple needs, including (i) career oriented education and skills to students interested in directly entering the workforce; (ii) contracted training and education programmers for local employers; (iii) high-touch remedial education for secondary school graduates not ready to enroll in traditional colleges, giving them a path to transfer to three or four year institutions; and (iv) general interest courses to the community for personal development and interest. Bachelor of Vocation will have with multiple exits such as Diploma/Advanced Diploma under the NSQF(National Skills Qualifications Framework).

The Bachelor of Vocation model, by and large, will be accessible to a large number of individuals of the community, offer low cost and high quality education locally, that encompasses both vocational skills development as well as traditional coursework, thereby providing opportunities to the learners to move directly to the employment sector or move into the higher education sector. It offers a flexible and open education system which also caters to community-based life-long learning needs. It has a synergistic relationship between the community, community college and the job market.

## **About the programme**

Cotton is a crop that exerts considerable influence on India's economy. Besides securing livelihood for over 60 million people engaged in various vocations related to farming, trade and textile industry. The ginning industry separates cotton fibres from seeds. The ginning process is the most important mechanical treatment that cotton undergoes before it is converted into yarns and fabrics. Any damage caused to the quality of fibres during ginning cannot be rectified later in the spinning or subsequent processes and milling.

This course is based on Ginning and Spinning Technologies. By introducing this course skilled persons are produces whom can work in the cotton and spinning industries with high efficiency and productivity.

I=INTERNAL EXAM, E=EXTWRNAL EXAM,

ESE=END SEMESTER EXAM, PA=PROGRESSIVE ASSESMENT

### SEMESTER - I

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT101	COMUNICATION SKILL	2	-	2	40	60	--	--	100
TGT102	ENGINEERING WORK SHOP PRACTICE (MECHANICAL)	-	8	8	--	--	80	120	200
TGT103	SEED COTTON PROCESSING	4	-	4	40	60	--	--	100
TGT104	OPERATION OF SPINNING MACHINES	-	8	8	--	--	80	120	200
TGT105	SPINNING MACHINERY 1	2	2	4	30	50	40	80	200
TGT106	SPINNING PROCESS 1	2	2	4	30	50	40	80	200
<b>TOTAL</b>				30	170	270	200	360	1000

### SEMESTER - II

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT201	COMPUTER APPLICATION-1	-	2	2	--	--	40	60	100
TGT202	ENGINEERING WORK SHOP PRACTICE (ELECTRICAL)	4	4	8	40	60	80	120	300
TGT203	GINNING TECHNOLOGY 1	4	-	4	40	60	--	--	100
TGT204	SPINNING PROCESS 2	4	-	4	40	60	--	--	100
TGT205	GINNING PRACTICE	-	6	6	--	--	80	120	200
TGT206	SPINNING PRACTICE	-	6	6	--	--	80	120	200
<b>TOTAL</b>				30	120	180	280	420	1000

### **SEMESTER - III**

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT301	COTTON QUALITY AND ITS TESTING	6	-	6	40	60	--	--	100
TGT302	HUMAN RESOURCE MANAGEMENT	2	-	2	40	60	--	--	100
TGT303	GINNING TECHNOLOGY 2	2	2	4	30	50	40	80	200
TGT304	SPINNING MACHINERY 2	2	2	4	30	50	40	80	200
TGT305	COTTON TESTING PRACTICE	-	12	12	--	--	120	180	300
TGT306	COMPUTER APPLICATION-2	-	2	2	--	--	40	60	100
<b>TOTAL</b>				30	140	220	240	400	1000

### **SEMESTER - IV**

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT401	MACHINERY MAINTENANCE	0	6	6	--	--	80	120	200
TGT402	MODERN SPINNING TECHNOLOGY	4	2	6	30	50	40	80	200
TGT403	YARN QUALITY PARAMETERS AND THEIR TESTING	4	2	6	30	50	40	80	200
TGT404	PROCESS CONTROL AT SPINNING	2	4	6	30	50	40	80	200
TGT405	PROCESS CONTROL AT GINNING	2	4	6	30	50	40	80	200
<b>TOTAL</b>				30	150	250	200	400	1000

## SEMESTER - V

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT501	INDUSTRIAL PROTECTION	2	4	6	30	50	40	80	200
TGT502	INDUSTRIAL MANAGEMENT	3	-	3	40	60	--	--	100
TGT503	STATISTICAL QUALITY CONTROL	3	-	3	40	60	--	--	100
TGT504	INDUSTRIAL PRACTICE AT GINNING	-	14	14	--	--	200	300	500
TGT505	ENVIRONMENT CONSERVATION & HAZARD MANEGMENT	4	-	4	40	60	--	--	100
<b>TOTAL</b>				30	150	230	240	380	1000

## SEMESTER - VI

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT601	ELECTRICAL AND ELECTRONICS ENGGFOR GINNING & SPINNING	2	2	4	30	50	40	80	200
TGT602	ENTREPRENURSHIP DEVELOPMENT	4	-	4	40	60	--	--	100
TGT603	ELECTRONIC PRACTICE	-	4	4	--	--	40	60	100
TGT604	INDUSTRIAL PRACTICE AT SPINNING	6	12	18	40	60	200	300	600
<b>TOTAL</b>				30	110	170	280	440	1000

**BVTGTR1: Eligibility Criteria (EC) for Admission**

1. The eligibility conditions for admission to the program will be 10+2 or equivalent in any stream .
2. If the candidate has attained the specific level 4 of NOS of Bachelor of Vocation sector (by decision of equivalence committee of the college) can get admitted in B.Voc. for the programme
3. There is no age bar for admission to Bachelor of Vocation
4. The student can take exit from this course at any point of time and can get re-entry in this programme. Such students will get priority in admission than to a fresher student. (multi entry multi exit scheme).

**BVTGTR2: Admission Procedure**

1. For admission to the programmes offered, preference should be given to the learners living in the local community. Reservation to SC, ST, OBC and PwD categories will be available as per the extant national / State policy.
2. Admissions may be done on a rolling basis depending on the duration of the programmes to facilitate a steady stream of learners joining the college and moving out as trained work force to the job market, round the year and not just once in a year.
3. The applicants seeking re-entry into the college should get preference in admission over the new applicants.
4. Candidates are selected on the basis of Merit.

**BVTGTR3: Fees and Scholarship:**

1. Student fee should be decided as per the prevalent practice for fee fixation for aided courses.
2. Attempt should be made to recover part of the operating expenditure from the student fees.

**BVTGTR4: Registration / Enrollment:**

1. Every student admitted to the college for the programme must get enrolled to university within a month from the date of admission.

### **BVTGTR5: Semester Examinations**

1. Candidates desirous of appearing at any Semester Examination shall have to submit applications in the prescribed form, through the designated authority on or before the prescribed date.
2. No candidate will be admitted to any Semester examination unless the Designated Authority i.e. the Head of the Department or Principal of the College certifies that:
  - (1) The candidate attended the course of study to the satisfaction of the designated authority.
  - (2) The candidate maintained a good conduct and character during the studies.
  - (3) The candidate maintained minimum 80% attendance in each semester.

### **BVTGTR6: Evaluation**

1. Appropriate mechanism for assessment of the learners' progress towards acquisition of knowledge and skill should be developed by the College. Partner industries should also be given a clear and well defined role in the assessment of the learners.
2. Practical or hands on skills should be given comparatively more weightage in the overall assessment plan.
3. The College should adopt and integrate the guidelines and recommendations of the respective Sector Skill Councils (SSCs) for the assessment and evaluation of the vocational component, wherever available. They should also involve the SSCs in the assessment process, wherever required. It applies to colleges, both Autonomous and non-Autonomous, and universities to maintain Occupational Standards and the fitness for the job.
4. Theory of each CORE paper will be evaluated for a maximum of 100 marks out of which, 40 marks shall be for Continuous evaluation (Exams) and 60 marks for the end semester examination. An end semester examination shall be of 2 hours duration.

### **BVTGTR7: rules for grading**

1. One Credit would mean equivalent of 14-15 periods of 60 minutes each, for theory, workshops / labs and tutorials per semester.
2. For internship / field work, the credit weightage for equivalent hours shall be 50% of that for lectures / workshops
3. For self-learning, based on e-content or otherwise, the credit weightage for equivalent hours of study shall be 50% of that for lectures / workshops
4. To pass a subject in any Semester a candidate must obtain a minimum of 40% of marks in each paper.

5. If a candidate fails in any subject, he has to reappear for that particular paper and pass. (That is, for example if candidate fails in midterm exam of a subject, he has to reappear for midterm of that subject.)
6. The performance of each candidate in all the subjects will be evaluated on 7- point scale in term of grades as follow:

Grading Scheme		%age according to Grade	Grade Points	Qualitative Meaning of Grade
1	A +	90-100	10.0	Outstanding
2	A	80-89	9.0	Excellent
3	A-	70-79	8.0	Very Good
4	B +	60 – 69	7.0	Good
5	B	50-59	6.0	Average
6	B-	40-49	5.0	Fair
7	F	Less Than 40	0	Fail
8	I	Incomplete		

**BVTGTR8: performance index**

1. The performance of a student in a semester is expressed in terms of the **Semester Performance Index (SPI)**.

**SEMESTER PERFORMANCE INDEX (SPI)**

The Semester Performance Index (SPI) is the weighted average of Course Grade Points obtained by the student in the semester. The Weights assigned to Course Grade Points are the Credits carried by the respective courses.

$$\begin{aligned}
 & \text{a. } g_1 c_1 + g_2 c_2 + \dots \\
 2. \text{ SPI} &= \frac{\dots}{\text{a. } c_1 + c_2 + \dots}
 \end{aligned}$$

Where,  $g_1, g_2, \dots$  are the Grade points obtained by the student in the Semester, for Courses carrying Credits  $c_1, c_2, \dots$  respectively.

2. The cumulative performance of a student at the end of the Semester / Course is expressed in terms of the **Cumulative Performance Index (CPI)**.

**CUMULATIVE PERFORMANCE INDEX (CPI)**



This index is defined as the weighted average of Course Grade Points obtained for all the weights for Theory Papers (Both Mid Term & End Term) and Practicals attempted since his admission to the program, where the weights are defined in the same way as in **Semester Performance Index (SPI)**.

3. If a failed student repeats a course, only the Grade Points obtained in the latest attempt shall be counted in the **Cumulative Performance Index**. Whenever the candidate clears the subject in the next semester examination, the total credits for that subject will be added to CPI.
4. For any Semester, the maximum marks for the Mid Term and End Term assessments are shown in the teaching and examination scheme. For the purpose of Mid Term assessment, tests, quizzes, assignments or any other suitable methods of assessment may be used by the department.

#### **BVTGTR9: semester passing scheme**

1. For each semester examination, a candidate will be considered as pass if he/she has secured “B-“ or above grade in all the subject (s) and overall grade point 5.00 or above.
2. For each semester examination, a candidate will be considered as fail if he/she has secured “F” grade in any or all the subject (s).
3. If the candidate does not fulfill the subject requirements including requisite attendance percentage, he/she will be given I grade and the candidate will have to complete the course requirements before the commencement of the next End Semester examination. If the candidate does not clear I grade in any subject before the commencement of the next End Semester examination, he/she will be considered fail - F grade.
4. Candidate has to clear his / her ‘F’ grade or ‘I’ grade, if any, by the next End Semester examination.

#### **BVTGTR10: semester promotion scheme**

A candidate will be promoted to the subsequent Semester according to the following scheme:

1. A candidate would be granted admission to the Second Semester if and only if he/she has been granted Term for First Semester and has applied for the university examination.
2. A candidate would be granted admission to the Third Semester if and only if he/she has been granted Term for First & Second Semesters and has applied for the university examination.
3. A candidate would be granted admission to the Fourth Semester if and only if he/she has cleared all the subjects of First Semester. He /She will be permitted to pursue his/her study of Fourth Semester, provided his/her term for II & III Semesters is granted and has applied for the university examination.

<b>Promotion Criteria</b>	
<b>Semester</b>	<b>Condition(s) For Promotion</b>
II	Grant of Term for Semester – I
III	Grant of Term for Semester I and Semester II
IV	Clearing of Semesters I completely and Grant of Term for Semester II & Semester III
V	Clearing of Semesters II completely and Grant of Term for Semester III & Semester IV
VI	Clearing of Semesters III completely and Grant of Term for Semester IV & Semester V

### **BVTGTR11: award of grading / division**

No class/ division will be awarded to the students in the first 5 semesters. Divisions shall be awarded only at the end of Final Examinations on successful completion of all the Semesters. For awarding the degree at the end of the course, Cumulative Performance Index (CPI) of all the Mid Term and Final exams shall be taken in to consideration as per the following pattern of **Cumulative Performance Index (CPI)**:

<b>S.N.</b>	<b>CPI</b>	<b>Division</b>
1	7.50 to 10.00	FIRST Division with Distinction
2	6.50 to 7.49	FIRST Division
3	6.00 to 6.49	SECOND Division

### **BVTGTR12: award of degree**

1. Award of Certificate, Advanced certificate, Diploma or Advanced Diploma, as the case may be, would depend on acquisition of requisite credits as prescribed by the certification body and not on the duration of the calendar time spent in pursuing the course.
2. The certificate shall mention the credits earned, course duration (in hours), and the curriculum covered. If the course is aligned with NVEQF / NSQF, the corresponding NVEQF / NSQF level should also be mentioned on the certificate.
3. Award of degree will be as follows:

<b>NVEQF Level</b>	<b>Skill Component Credits</b>	<b>General Education Credits</b>	<b>Normal calendar duration (post meeting the entry criterion)</b>	<b>Awards</b>
7			Six semesters	Bachelor of Vocation
6	72	48	Four semesters	Advanced Diploma
5	36	24	Two semesters	Diploma
	18	12	One semester	Advanced Certificate
	9	6	Three Months	Certificate

## B.VOC TEXTILE AND GINNING TECHNOLOGY

### SEMESTER – III

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT301	COTTON QUALITY AND ITS TESTING	6	-	6	40	60	--	--	100
TGT302	HUMAN RESOURCE MANAGEMENT	2	-	2	40	60	--	--	100
TGT303	GINNING TECHNOLOGY 2	2	2	4	30	50	40	80	200
TGT304	SPINNING MACHINERY 2	2	2	4	30	50	40	80	200
TGT305	COTTON TESTING PRACTICE	-	12	12	--	--	120	180	300
TGT306	COMPUTER APPLICATION-2	-	2	2	--	--	40	60	100
	<b>TOTAL</b>			30	140	220	240	400	1000

## TGT301:COTTON QUALITY AND ITS TESTING

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations for 30 marks and external Examination conducted by University examixnation for 50 marks.Students are evaluated on the basis ESE for 40 marks and PA for 80 marks for practical examination

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT301	COTTON QUALITY AND ITS TESTING	6	--	6	40	60	--	--	100

### **Theory:**

#### **Topic 1: Quality Parameters of Cotton**

- 1.1 Need of cotton quality
- 1.2 Types of cotton on basis of its quality
- 1.3 Length, thickness, strength of cotton fibers and presence of trash

#### **Topic 2: Fiber Length/ Strength/ Fineness and trash of Cotton**

- 2.1 Importance of Characteristics of fibers to prepare count of yarn
- 2.1 Testing systems to measure different properties of fibers
- 2.2 Parameters of fiber length and trash
- 2.3 Definition of short fibers and method to find out it
- 2.4 Calculation to find out length uniformity of fibers
- 2.5 Definition of fiber maturity and its importance
- 2.6 Parameters affecting strength of fibers

### **Reference:**

Cotton quality by USTER

## TGT302:HUMAN RESOURCE MANAGEMENT

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations for 40 marks and external Examination conducted by University examination for 60 marks.

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ES E	PA	
TGT302	HUMAN RESOURCE MANAGEMENT	2	0	2	40	60	00	00	100

### Theory:

#### **Unit I: Introduction of Human needs, relations and values and Behavioural dynamics**

- Appreciate importance of human resource
- Identify human motivations.
- Appreciate values and ethics for relationships
- Analyse self for interpersonal behaviour.
- Develop team spirit and positive attitude.

#### **Unit II: Leadership Development and stress management.**

- Use leadership qualities.
- Develop subordinates by motivations & training.
- Develop decision making ability
- Identify need for change and barriers to change.
- Suggest strategies for any change.
- Resolve conflicts.
- Analyse stress situation
- Manage stress.

### Reference Books:

Sr. No.	Title of Books	Author	Publication
1.	Managing people at work.	Ahuja, Jain & Chhabra.	Dhanpatrai and Sons.
2.	Human Resource Management	D.R.Patel, Y.R.Joshi	Atul Prakashan.
3.	Human Resource Management	Biswajeet Pattanayak	PHI
4.	Human Resource Management	K. Aswathappa	Tata McGraw Hill
5.	Designing and Managing human resources systems.	Pareek, Udai and Rao T.V.	Oxford and TBH Publishing Co., New Delhi, 1981.

## **List of Learning Websites:**

- [www.cipd.co.uk/NR/rdonlyres/29D9D26D.../9781843982654\\_sc.pdf](http://www.cipd.co.uk/NR/rdonlyres/29D9D26D.../9781843982654_sc.pdf)
- [www.slid  
eshare.net/kumaravinash23/chapter-12-2634971](http://www.slideshare.net/kumaravinash23/chapter-12-2634971)
- [www.tuto  
r2u.net/business/people/motivation\\_theory\\_mcgregor.asp](http://www.tutor2u.net/business/people/motivation_theory_mcgregor.asp)
- [www.you  
tube.com/watch?v=RwZ4-GTSNUI](http://www.youtube.com/watch?v=RwZ4-GTSNUI)
- [www.entrepreneur.com/article/204248](http://www.entrepreneur.com/article/204248)
- <http://www.youtube.com/watch?v=pbxpg6D4Hk8>

## TGT303: GINNING TECHNOLOGY 2

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations for 30 marks and external Examination conducted by University examination for 50 marks. Students are evaluated on the basis ESE for 40 marks and PA for 80 marks for practical examination.

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT303	GINNING TECHNOLOGY 2	2	2	4	30	50	40	80	200

### **Theory:**

#### **Topic 1: Cotton Transportation / Packing at Ginning**

- 1.1 Cotton transportation systems by air and belt
- 1.2 Advantages / disadvantages with use of cotton transportation systems
- 1.3 Cotton quality improvement with the use of transportation systems
- 1.4 Structure of various suction fans, piping and their installation
- 1.5 Automatic bale pressing system
- 1.6 Packing materials for cotton bales

#### **Topic 2: Parameters Affecting Characteristics of Cotton Fibers**

- 2.1 Preparation before processing of cotton at ginning
- 2.2 Speeds of cotton transportation systems / angle of ducting and size of piping
- 2.3 Quality improvement in kapas with use of pre cleaning systems
- 2.4 Effect of condition of parts of roller gin machine on fiber quality
- 2.5 Effect of moisture on cotton, its level / control

### **Practical:**

1. Observing effect of various transportation systems on cotton quality.
2. Identifying effect of cleaning system on final bale quality.
3. Checking of speed and settings of ginning machinery affecting fiber rupture and neps generation.
4. Checking of critical parameters of roller ginning machines affecting production rate.

### **Reference book:**

Ginning technology by TMC

## **TGT304: SPINNING MACHINERY 2**

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations for 30 marks and external Examination conducted by University examination for 50 marks. Students are evaluated on the basis ESE for 40 marks and PA for 80 marks for practical examination

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT304	SPINNING MACHINERY 2	2	2	4	30	50	40	80	200

### **Theory:**

#### **Topic 1: Speed Frame for Attenuation of Material**

- 1.1 Objective of Machinery
- 1.2 Factors Affecting Quality of Roving Material
- 1.3 Method to Reduce Roving Stretch

#### **Topic 2: Ring Frame and Winding for Spinning of Yarn**

- 2.1 Principles of Machinery
- 2.2 Parameters Affecting Yarn Quality
- 2.3 Optimization various Parameters to Enhance Yarn Quality / Productivity
- 2.4 Methods to Minimize Yarn Breakages / Hairiness
- 2.5 Care to Eliminate Excessive Wear & Tear to Critical Parts

### **Practical:**

1. Methods of measurement of moisture content of bales cotton and final yarn.
2. Finding out apron slippage at speed frame.
3. Measurement of pressure at suction tube of ring frames.
4. Measurement of top arm pressure/ Roller eccentricity at ring frame.

### **REFERENCE BOOK:**

Spinning machinery BY SITRA



## TGT305: COTTON TESTING PRACTICE

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations for 30 marks and external Examination conducted by University examination for 50 marks. Students are evaluated on the basis ESE for 40 marks and PA for 80 marks for practical examination.

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT305	COTTON TESTING PRACTICE	--	12	12	--	--	120	180	300

### **List of Practical:**

1. Measuring length variability in cotton fibers
2. Checking of proportion of seeds, seed coats, leafy matter / sand dust etc. in cotton
3. Measurement of moisture level in cotton
4. Checking of content of immature bolls / clusters in kapas
5. Measurement of length of fibers by testing machine as well as manual
6. Testing of fiber fineness
7. Observing effects of ginning process / machinery on quality of cotton fibers
8. Studying effect of cotton sample collection system
9. Testing of fiber maturity and maturity ratio
10. Measurement of length of fibers by manual
11. Testing of Short fibres %
12. Testing of Cotton colour grade and its calculation
13. Calculation of Cleaning Efficiency of Machinery
14. Generation/ Reduction of neps
15. Testing of Fibre Strength and Elongation

### **Reference Book:**

Physical Fibre Properties by USTER

## TGT306: COMPUTER APPLICATION- II

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis ESE for 40 marks and PA for 60 marks.

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT306	COMPUTER APPLICATION	0	2	2	00	00	40	60	100

Unit	Major Learning	Topics and Sub-topics
<b>Unit – I Using MS - PowerPoint 2007</b>	1.1 Create new presentation and apply basic formatting features 1.2 Use master slide 1.3 Create and manipulate table 1.4 Work with objects and clips	1. Outline of an effective presentations, 2. Starting a New Presentation Files, Saving work, 3. Creating new Slides, Working with textboxes. 4. Changing a slides Layout, Applying a theme, Changing Colours, fonts and effects, Creating and managing custom Colour & font theme, Changing the background
<b>UNIT-II MS-OFFICE INDIC &amp; TBIL</b>	2.1 Create application and other documents in Gujarati	1. Introduction about MS Office Indic 2. Installation of ms-office indic 3. How to change language English to Gujarati 4. Introduction about the Gujarati keyboards 5. Introduction about the Gujarati IME.
<b>UNIT- III Introduction to Internet HTML</b>	1. Use internet access efficiently.	<b>Applications of the Internet:</b> 1. E-mail 2. Voice mail 3. Newsgroup 4. Mailing list 5. Internet relay chat 6. Games 7. Video-conferencing 8. File transfer protocol
<b>Unit – IV Using HTML</b>	1. Comprehend the HTML page structure 2. Use basic formatting tags in HTML 3. Create and format Tables	1. Basic structure of HTML 2. Tables, Images and Links in HTML 3. Working with Multimedia Objects

## LIST OF EXERCISES/PRACTICAL/EXPERIMENTS :

The exercises/practical/experiments should be properly designed and implemented with an attempt to develop different types of skills leading to the achievement of the competency. Following is the list of exercises/practical/experiments for guidance.

S. No.	Unit No.	Experiment
1	I	<ul style="list-style-type: none"><li>• Basic operations of Power point, Create PPT and inset and delete slides</li><li>• Create Project presentations, Lecture presentations.</li><li>• Use of Mater Slide in Presentation</li><li>• Apply basic formatting features in presentation like font, font size, font</li></ul>
2	II	<ul style="list-style-type: none"><li>• Installation and keyboard setting of Gujarati indic.</li></ul>
3	III	<ul style="list-style-type: none"><li>• Practice browsing of different sites using search engine</li><li>• practice and understand different E-Mail services – Outlook, Yahoo mail, rediffmail etc</li></ul>
4	IV	<ul style="list-style-type: none"><li>• Basic program of HTML</li><li>• Program based on Inserting formatting tags for Text: bold, italic, underline, line break, special character, predefine headings, paragraph, comments.</li><li>• Use Font color, size, background and Alignment</li></ul>

## LEARNING RESOURCES:

### A. List of Books

Sr. No.	Author	Title of Books	Publication
1	CISTEMS	INTERNET AN	TMH
2	SAGMAN	MICROSOFT OFFICE FOR	PEARSON EDUCATION ISBN 81-
3	C. XAVIER	WORLD WIDE WEB	TMH
4	COURTER	MASTERING MS OFFICE -	TECHMEDIA
5	DAVID D.BUCH	PAGEMAKER 6.5 /7	BPB PUBLICATION
		PHOTOSHOP 6/ 7	

## **B. List of Major Equipment/ Instrument**

1. Computer
2. Projector
3. Equipments like printer,scanner,, plotter, modem

## **C. List of Software/Learning Websites**

- I. Microsoft Office Professional 2010
- II. Norton Antivirus 2012
- III. Window 7.0
- IV. MS-OFFICE Indic

## B.VOC TEXTILE AND GINNING TECHNOLOGY

### SEMESTER – IV

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT401	MACHINERY MAINTENANCE	0	6	6	--	--	80	120	200
TGT402	MODERN SPINNING TECHNOLOGY	4	2	6	30	50	40	80	200
TGT403	YARN QUALITY PARAMETERS AND THEIR TESTING	4	2	6	30	50	40	80	200
TGT404	PROCESS CONTROL AT SPINNING	2	4	6	30	50	40	80	200
TGT405	PROCESS CONTROL AT GINNING	2	4	6	30	50	40	80	200
	<b>TOTAL</b>			30	120	200	240	440	1000

## **TGT401:MACHINERY MAINTENANCE**

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis ESE for 40 marks and PA for 60 marks for practical examination

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT401	MACHINERY MAINTENANCE	0	6	6	00	00	80	120	200

### **List of Practical:**

1. Improving condition of critical parts of ginning and transportation systems.
2. Measurement of different settings of critical parts of ginning machines and set them.
3. Ideal grooving of ginning rollers.
4. Sharpening of fixed knives.
5. Measurement of speed of critical parts of ginning machinery.
6. Cleaning of ginning machinery.
7. Observing effect of greasing and oiling in ginning machines.
8. Observing performance baling press in terms of its pressing efficiency
9. Rectifying condition of spinning machinery.
10. Measurement of critical settings of spinning machinery.
11. Identifying sharpness of wire points of beaters and cylinders.
12. Checking of eccentricity of ring frame rollers.
13. Spindle centering at ring frame.
14. Cleaning of drafting zone.
15. Oiling and greasing of different parts of machinery.
16. Measuring Speeds of Various parts of spinning machinery

### **REFERENCE BOOK:**

Ginning Machinery Maintenance by Bajaj Steel

Spinning Machinery Maintenance by LMW

## TGT 402: MODERN SPINNING TECHNOLOGY

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations for 30 marks and external Examination conducted by University examination for 50 marks for theory and internal examinations for 80 marks and external examinations for 40 for practical.

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT402	MODERN SPINNING TECHNOLOGY	4	2	6	30	50	40	80	200

### Theory:

#### 1) New Technique for yarn production

- Friction Spinning, Open End Spinning, Compact Spinning etc.

#### 2) Importance of open end spinning

- History
- Main Principle of open end spinning
- Why rotor spinning more potential compare of ring spinning?
- Type of raw material used for open end spinning

#### 3) Rotor spinning Machinery

- Structure of machine
- Requirement of preparatory machinery and its process
- Detail study about spinning box, piecer and yarn clearing system
- Rotor speed, diameter, cleaning and its drive

#### 4) Rotor spinning process

- Operating principle of the rotor spinning for cotton and man made fibres

- Use of comber noil and flat waste in open end mixing
- Fibre separation and fibre transfer in rotor
- Fibre collection and twist insertion in rotor
- Yarn formation and yarn tension in open end spinning

#### **5) Automation in Rotor spinning**

- Machine and Transport automation

#### **6) Technological Aspects**

- Modern Developments in rotor
- Limitations in rotor spinning
- Economics of Rotor yarn
- End uses of Rotor yarn

#### **Practicals:**

- 1) Observing effect of rotor speed on OE yarn
- 2) Checking Cleaning Efficiency of Rotor
- 3) Oiling and greasing of different parts of machinery.
- 4) Measuring Speeds of Various parts of spinning machinery

#### **Reference Books:**

- 1) Rotor Spinning- F.A. Lawrence
- 2) Modern Spinning Systems –W.Klein Vol.V
- 3) New Spinning Systems - R.V.Mahendra Gowda (NCUTE)



# **TGT403:YARN QUALITY PARAMETERS AND THEIR TESTING**

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations for 40 marks and external Examination conducted by University examixnation for 60 marks

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT403	YARN QUALITY PARAMETERS AND THEIR TESTING	4	2	6	30	50	40	80	200

## **Theory:**

### **Topic 1: Yarn Count / Strength and Twist/ Appearance**

- 1.1 Meaning of Count and Strength
- 1.2 Testing Method to Find out Count / Strength
- 1.3 Calculation to Find out Variation of Count / Strength
- 1.4 Norms on Level Count / Strength and their Variability
- 1.5 Importance of Twist in Yarn
- 1.6 Method to Find out Twist and its Variability

### **Topic 2: Yarn Unevenness and Imperfections/ Yarn Faults**

- 2.1Basics of Unevenness of Material/ Yarn Faults
- 2.2 Types of Imperfections
- 2.3 Fibers / Machinery Related Parameters Affecting Imperfections
- 2.4 Norms on Level of Yarn U% & Imperfections
- 2.5 Effect of Faults on Processing of Yarn / Fabric & Their Quality

### **Topic 3: Instruments for Testing various Quality Parameters**

- 3.1 Wrap Reel and Balance for Checking Weight of Sliver/Roving/Yarn
- 3.2 Yarn Strength Testers for Checking Single Thread / Lea Form Yarn
- 3.3 Uster for Measuring Yarn Unevenness/ Imperfections & Hairiness

### 3.4 Classimat for Observing Level of Short / Long Thick-Thin Faults in Yarn

#### **Topic 4: Humidification and Yarn Conditioning System**

4.1 Principles and Function

4.2 Importance of Systems

4.3 Type of Mechanism

4.4 Maintenance of Systems

#### **REFERENCE BOOK:**

- 1) Process Control At Spinning By A R Garde And T A Subramanian
- 2) Humidification System By C Doctor

#### **List of Practical:**

1. Measurement of Yarn Count and Strength values including their CV %.
2. Measurement of Yarn Imperfections/Faults and Twist.
3. Process for maintain the humidity in Ginning process.
4. Process for maintain the humidity in Spinning process.

## TGT404:PROCESS CONTROL AT SPINNING

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations for 30 marks and external Examination conducted by University examination for 50 marks. Students are evaluated on the basis ESE for 40 marks and PA for 80 marks for practical examination

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT404	PROCESS CONTROL AT SPINNING	2	4	6	30	50	40	80	200

### **Theory:**

#### **Topic 1: Control of Yarn Properties**

- 1.1 Number of Wrappings / Tolerance Limit
- 1.2 Parameters of Blow Room to Ring Frame Machineries
- 1.3 Setting between Rollers
- 1.4 Machinery Condition
- 1.5 Total Draft and Break Draft at Speed / Ring Frames
- 1.6 Top Roller Pressure / Hardness

#### **Topic 2: Yarn Realization and Process Waste Control**

- 2.1 Waste Losses at Blow Room / Carding /Combing
- 2.2 Yarn Waste
- 2.3 Sweepings
- 2.4 Invisible Loss
- 2.5 Moisture Level in Yarn

## **List of Practical:**

1. Optimization of Speed and Setting Related Parameters.
2. Improving Yarn Quality.
3. Optimization of Waste Level.
4. Reducing End Breakage Rate at Ring Frame.
5. Reducing Variability in Yarn Quality.
6. Increasing Yarn Realization.
7. Optimizing Humidification System.
8. Reducing Apron Slippage

## **Reference Book:**

Process Control At Spinning By A R Garde And T A Subramanian

## **TGT405: PROCESS CONTROL AT GINNING**

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations for 30 marks and external Examination conducted by University examination for 50 marks. Students are evaluated on the basis ESE for 40 marks and PA for 80 marks for practical examination

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT405	PROCESS CONTROL AT GINNING	2	4	6	30	50	40	80	200

### **Theory:**

#### **Topic 1: Cleaning of Cotton and Rupture of Fibers**

- 1.1 Checking of Trash Content in Ginned Cotton
- 1.2 Preparation of Kapas
- 1.3 Machinery Condition
- 1.4 Machinery Parameters
- 1.5 Level of Moisture in Kapas

#### **Topic 2: Ginning% and its Productivity**

- 2.1 Quality/ Preparation of Seed Cotton
- 2.2 Speed of Gin Machineries
- 2.3 Condition of Critical Parts

### **Reference Book:**

Process Control at Ginning by P H Shah

## **List of Practical:**

1. Optimization of speed and setting related parameters.
2. Improving condition of critical parts.
3. Deciding ideal process sequence.
4. Optimization of moisture content in materials.
5. Enhancement of cotton realization.
6. Improving productivity.
7. Improving Raw- material preparation
8. Snap Study for Ginning machinery

## B.VOC TEXTILE AND GINNING TECHNOLOGY

### SEMESTER – V

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT501	INDUSTRIAL PROTECTION	2	4	6	30	50	40	80	200
TGT502	INDUSTRIAL MANAGEMENT	3	-	3	40	60	--	--	100
TGT503	STATISTICAL QUALITY CONTROL	3	-	3	40	60	--	--	100
TGT504	INDUSTRIAL PRACTICE AT GINNING	-	14	14	--	--	200	300	500
TGT505	ENVIRONMENT CONSERVATION & HAZARD MANEGMENT	4	-	4	40	60	--	--	100
	<b>TOTAL</b>			30	150	230	240	380	1000

# TGT501: INDUSTRIAL PROTECTION

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations for 40 marks and external Examination conducted by University examination for 60 marks

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT501	INDUSTRIAL PROTECTION	2	4	6	30	50	40	80	200

## Theory:

### Topic I: ELEMENTS OF PROTECTION

- Line diagram of a power system and its elements.
- Faults and abnormalities, their causes, types and effects.
- Functions of basic elements of a protective system.
- Backup protection & its types.
- Concept of protective relay and its selection.
- Principle of working and operation of relays and their construction.
- Necessity of Protective Transformers.

### Topic II: PROTECTIVE RELAYS, PROTECTIVE TRANSFORMER AND PROTECTIVE SYSTEM

- Necessity & types of interruption devices like ACB, OCB, ABCB, SF6 and vacuum circuit breakers.
- Requirements and types of isolators and circuit breakers
- Protection against Prime mover failure and unbalance loading.
- Protection of transformers, Transmission line and feeders, motors, bus bars.



## **List of Practical:**

- 1) Trouble shooting of an induction motor.
- 2) Dismantle and trouble shoot of ceiling fan.
- 3) Read and interpret I.E. rules pertaining to safety.
- 4) Use overload relay.
- 5) Study Buchholz relay for transformer protection.
- 6) To study about vacuum circuit breaker.
- 7) To study about SF6 circuit breaker.
- 8) Draw the schematic diagram of the protective schemes for 66 KV/132 KV/220 KV Sub Station.

## **Text Books:**

- 1) Switch gear & Protection by S. Rao
- 2) Electrical Installation estimating and costing S.L. Uppal Khanna Publication.
- 3) A Course in Electrical Installation Estimating & Costing by J.B.Gupta- Katson
- 4) Electrical Maintenance and Repair By J.I. Watt

## **Reference Books:**

- (1) Protective Relaying Vol. I & II by Van Warrington
- (2) Protective Relaying by Russel & Mason
- (3) Electrical Power by S.L.Uppal
- (4) Electrical Power System V. K. Mehta
- (5) J & P Hand book of Switchgear by Lythall

# TGT502: INDUSTRIAL MANAGEMENT

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations for 30 marks and external Examination conducted by University examixnation for 50 marks.

Students are evaluated on the basis ESE for 40 marks and PA for 80 marks for practical examination

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT502	INDUSTRIAL MANAGEMENT	3	0	3	40	60	00	00	100

## Theory:

### **Topic I: INTRODUCTION TO INDUSTRIAL MANAGEMENT**

- 1.1 Know the objectives of learning this subject.
- 1.2 Need, Scope & importance of Industrial Management in Industries.
- 1.3 Need of attitude, knowledge & skill required for application of Industrial Management.
- 1.4 System- concept , definition, types, parameters , variables and behavior.

### **Topic II: ORGANISATION STRUCTURE AND ORGANISATIONAL DYNAMICS AND MATERIAL MANAGEMENT**

- 2.1 Organisation structure-definition, goals, factors considered in formulating structure.
- 2.2 Concept, meaning and importance of division of labor, scalar & functional processes, span of control, delegation of authority, centralisation and decentralisation in industrial management.
- 2.3 Types, advantages, disadvantages and applications of organisation structure.
- 2.4 Organisational culture and climate –meaning , differences and factors affecting them.

2.5 Material management-definition, functions, importance, relationship with other departments.

### **3.0 CRITICAL PATH METHOD AND PRE EVALUATION REVIEW TECHNIQUE (CPM/PERT).**

3.1 CPM & PERT-meaning, features, difference, applications.

3.2 Understand different terms used in network diagram.

3.3 Draw network diagram for a real life project containing 10-15 activities, computation of LPO and EPO.

3.4 Determination of critical path on network.

### **Reference Books:**

1. System Analysis	O.Optner
2. Learning Package on Industrial Management	TTTI, Bhopal
3. What every supervisor should know	Lester R.
4. CPM & PERT principles and Applications	L.S.Srinath
5. Modern Production Management	Buffa
6. Materials Management	N. Nair
7. Value Analysis	Mikes
8. Industrial Engineering & Management	O. P. Khanna

## TGT503: STATISTICAL QUALITY CONTROL

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations for 40 marks and external Examination conducted by University examination for 60 marks

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT503	STATISTICAL QUALITY CONTROL	3	0	3	40	60	00	00	100

### **Theory:**

#### **Topic – I Introduction to S.Q.C. in textile**

1. Textile parameters : Parameters of Textile Processes & Sub processes
2. Importance of Statistics
3. Parameters of Textile Processes & Subprocesses
4. Different types of frequency distribution
5. Different methods of graphical Representation

#### **Topic – II Basic statistical concept**

1. Different Measures of central tendency
2. Calculation of mean, median, mode and quartile.
3. Different Measures of Dispersion
4. Calculation of mean deviation, Standard deviation and C.V. %
5. Correlation- diff types of correlation
6. Karl Pearson's coefficient of correlation

#### **Topic – III Theoretical Distribution**

1. Detail study of Binomial distribution with simple Calculation.
2. Detail study of Poisson distribution with simple Calculation.

## **List of Books:**

<b>S.No.</b>	<b>Author</b>	<b>Title of Books</b>	<b>Publication</b>
1	J. E .Booth	Textile Testing	Year 1996 CBS Publisher
2	Tippet, Vikas gupta.	Statistical Methods for Textile Technology .	Year 1982
3	C.B. Gupta	Statistical Methods	Year 2004 Vikas publishing house.
4	Raygopalan ,Angopalan	Testing Testing part I & 2	Year 1993 S.S.M.I.T.T ,

## **List of Learning Websites:**

1. <http://www.massey.ac.nz/~mbjones/Book/Chapter11.pdf>
2. <http://wzr.pl/~wycinka/Descriptive%20statistics/descr.summary.sol.pdf>
3. <http://www.fil.ion.ucl.ac.uk/spm/doc/mfd/2004/FandTtests.ppt>
4. <https://www.fil.ion.ucl.ac.uk/spm/doc/mfd/2005/Ft-tests.ppt>

## TGT504: INDUSTRIAL PRACTICE AT GINNING

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis ESE for 200 marks and PA for 300 marks.

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT504	INDUSTRIAL PRACTICE AT GINNING	0	14	14	00	00	200	300	500

### **Areas to be covered:**

- A) Improving quality of raw material i.e. Cotton
- B) Optimization of Ginning processes
- C) Optimization of mechanical parameters of ginning machinery
- D) Enhancing Ginning productivity
- E) Improving quality of end product
- F) Improving of Cotton Realization

### **List of Topics/Practical:**

- 1) Optimization of speed and setting related parameters.
- 2) Improving condition of critical parts.
- 3) Optimization of moisture content in materials.
- 4) Snap Study for Ginning machinery
- 5) Ideal grooving of ginning rollers.
- 6) Sharpening of fixed knives.
- 7) Cleaning of ginning machinery.
- 8) Observing effect of greasing and oiling in ginning machines.
- 9) Identifying effect of cleaning system on final bale quality.

- 10) Checking performance of kapas transportation system. To study air pressure, revolutions of suction fans, diameter & length of ducting pipe etc.
- 11) Performance checking of pre ginning cleaner in terms of removal of immature bolls.
- 12) Checking of production of double roller gin machines and their ginning %.
- 13) To study cleaning efficiency of post ginning cleaner.
- 14) Performance checking of moisture system at ginning.
- 15) Level of moisture in cotton.
- 16) To observe bale size, weight, packing etc. as per ISI norms
- 17) Observing effects of air pressure, shape / position of mouth piece, stationery condenser, ducting diameter / fan RPM etc.

### **Form of Report Writing:**

- a) Background of Project
- b) Objectives of Project
- c) Methods on Experimental Works
- d) Results Obtained
- e) Discussion
- f) Conclusions of the Project Study
- g) Acknowledgements
- h) Annexures on Actual Machinery Parameters, Raw Material Quality, Ginning Process Sequence, Etc.

# **TGT505: ENVIRONMENT CONSERVATION & HAZARD MANAGEMENT**

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations for 40 marks and external Examination conducted by University examination for 60 marks

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT505	ENVIRONMENT CONSERVATION & HAZARD MANAGEMANT	4	0	4	40	60	00	00	100

## **Theory:**

### **Unit – I: Ecology and environment**

- 1.1 Importance of environment and scope
- 1.2 Engineering and environment issues
- 1.3 The natural system, Biotic and a-Biotic components and processes of natural system
- 1.4 Eco system, food chain and webs and other biological Systems

### **Unit– II: Sustainable Development**

- 2.1 Concept of sustainable development,
- 2.2 Natural resources, a-biotic and biotic resources
- 2.3 Principles of conservation of energy and management
- 2.4 Need of Renewable energy
- 2.5 Growth of renewable energy in India and the world
- 2.6 Concept of waste management and recycling



### **Unit – III: Wind Power**

- 3.1 Growth of wind power in India
- 3.2 Types of wind turbines – Vertical axis wind turbines (VAWT) and horizontal axis wind turbines (HAWT)
- 3.3 Types of HAWTs – drag and lift types
- 3.4 Working of large wind turbines
- 3.5 Aerodynamic control of large and small wind turbines

### **Unit – IV Solar Power and Biomass Energy**

- 4.1 Types of solar cookers and solar water heaters
- 4.3 Solar PV systems and its components and their working
- 4.4 Types of solar PV cells
- 4.5 Solar PV and solar water heaters, rating and costing
- 4.6 Energy content in biomass of different types
- 4.7 Types of Biomass conversion processes
- 4.8 Biogas production

## SUGGESTED LEARNING RESOURCES

### A. List of Books:

S. No.	Title of Book	Author	Publication/Year
1	Renewable Energy Technologies	Solanki, Chetan Singh	PHI Learning, New Delhi, 2010
2	Ecology and Control of the	Izrael, Y.A.	Kluwer Academic Publisher
3	Environmental Noise Pollution and Its Control	Chhatwal, G.R.; Katyal, T.; Katyal,	Anmol Publications, New Delhi
4	Wind Power Plants and Project	Earnest, Joshua & Wizelius,	PHI Learning, New Delhi, 2011
5	Renewable Energy Sources	Kothari, D.P. Singal, K.C.,	PHI Learning, New Delhi, 2009
6	Environmental Studies	Anandita Basak	Pearson

### B. List of Major Equipment/ Instrument:

- i. Digital sound level meters (to check noise pollution)
- ii. Digital air quality meter (to measure air pollution)
- iii. Digital handheld anemometer (to measure wind speeds)
- iv. Digital hand held pyranometer (to measure solar radiation levels)

### C. List of Software/Learning Websites

- 1) [http://www1.eere.energy.gov/wind/wind\\_animation.html](http://www1.eere.energy.gov/wind/wind_animation.html)
- 2) [http://www.nrel.gov/learning/re\\_solar.html](http://www.nrel.gov/learning/re_solar.html)
- 3) [http://www.nrel.gov/learning/re\\_biomass.html](http://www.nrel.gov/learning/re_biomass.html)
- 4) <http://www.mnre.gov.in/schemes/grid-connected/biomass-powercogen>

## B.VOC TEXTILE AND GINNING TECHNOLOGY

### SEMESTER – VI

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT601	ELECTRICAL AND ELECTRONICS ENGGFOR GINNING & SPINNING	2	2	4	30	50	40	80	200
TGT602	ENTREPRENURSHIP DEVELOPMENT	4	-	4	40	60	--	--	100
TGT603	ELECTRONIC PRACTICE	-	4	4	--	--	40	60	100
TGT604	INDUSTRIAL PRACTICE AT SPINNING	6	12	18	40	60	200	300	600
	<b>TOTAL</b>			30	110	170	280	440	1000

## TGT601:ELECTRICAL AND ELECTRONICS ENGGFOR GINNING & SPINNING

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations for 30 marks and external Examination conducted by University examination for 50 marks. Students are evaluated on the basis ESE for 40 marks and PA for 80 marks for practical examination

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT601	ELECTRICAL AND ELECTRONICS ENGGFOR GINNING & SPINNING	2	2	4	30	50	40	80	200

### Detailed Course Content:

Unit	Major Learning Outcomes	Topics and Sub-topics
<b>Unit – I DC Circuits and machines</b>	<ul style="list-style-type: none"> <li>• Define various electrical parameters</li> <li>• Calculate energy bills</li> <li>• Describe principle, construction and applications of D.C. motor</li> <li>• Explain principle, construction and applications of D.C. generator.</li> <li>• Explain the working of three point DC motor starter</li> </ul>	<ul style="list-style-type: none"> <li>• Concept of EMF, current, Electrical charge, Work, power and energy</li> <li>• Resistance, specific resistance and ohm's law</li> <li>• Simple calculations of billing</li> <li>• Working principle, construction and applications of D.C. motor and generator.</li> <li>• Speed control of D.C.motor.</li> <li>• Necessity of starter</li> <li>• Working of three point starter and connection diagram</li> </ul>

<p><b>Unit – II AC Circuits and Machines</b></p>	<ul style="list-style-type: none"> <li>• Explain generation of three phase supply</li> <li>• Define various electrical parameters related to AC supply</li> <li>• Explain three phase star and delta connection.</li> <li>• Calculate simple problems of three phase star/delta type load.</li> <li>• Explain working principle And classification of transformers.</li> <li>• Explain construction of single phase transformer.</li> <li>• Explain working principle, classification and construction of induction motor.</li> <li>• Explain the working of various AC motor starters.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of an AC quantity, Generation of alternating voltage</li> <li>• Relation of the line voltage and phase voltage in three phase star connection and delta connection and Three phase power equation</li> <li>• Working principle, construction &amp; types of transformers, Accessories of power transformer, Auto transformer.</li> <li>• Construction and Working principle of three phase induction motor, starters and single phase induction motor</li> <li>• Testing and application</li> <li>• Construction and working of Synchronous machines</li> <li>• Testing and application</li> </ul>
<p><b>Unit-III Electronics Components</b></p>	<ul style="list-style-type: none"> <li>• Explain the working principle of different electronic devices</li> <li>• Explain various types of rectifiers with filter circuits</li> <li>• Explain various digital control in textile industries.</li> </ul>	<ul style="list-style-type: none"> <li>• Construction and working of photo Cell, photo diode, Zener Diode, Diode, SCR, MOSFET, IGBT</li> <li>• Study about different rectifiers and filter circuits</li> <li>• Use of digital control in textile processes.</li> </ul>

## **LIST OF EXERCISES/PRACTICAL:**

- 1) Verification of OHM's law
- 2) Measure equivalent resistance in (a)Series resistances (b)Parallel resistances
- 3) Measure power in A.C. Circuits
- 4) To Study about AC and DC Machines.
- 5) Direct load test of Three phase induction motor
- 6) Direct load test of Single phase transformers
- 7) Magnetizing and Load Characteristics of DC shunt generator
- 8) Direct load test of three phase alternator
- 9) Load Characteristics of DC series generator
- 10) Load Characteristics of DC compound generator

### **LEARNING RESOURCES**

#### **A. List of Books**

<b>Sr. No.</b>	<b>Title of Book</b>	<b>Author</b>	<b>Publication</b>
1.	B.L.Theraja	Fundamentals of Electrical Engg.	S Chand
2.	B.L.Theraja-II	Electrical Machines	S Chand
3.	V.K.Mehta	Fundamentals of Electrical Engg.	S Chand

#### **B. List of Major Equipment/ Instrument with Broad Specifications**

- Ammeter, Voltmeter, Wattmeter, Multimeter  
DC motors
- Single phase transformer  
AC motors
- Tube light, photo cell

#### **C. List of Software/Learning Websites**

- [www.electricalandelectronics.org](http://www.electricalandelectronics.org)
- [www.allaboutcircuits.com](http://www.allaboutcircuits.com)

## TGT602: ENTREPRENURSHIP DEVELOPMENT

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations for 40 marks and external Examination conducted by University examination for 60 marks

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT602	ENTREPRENURSHIP DEVELOPMENT	4	0	4	40	60	00	00	100

### **Theory:**

#### **Unit – I: ENTREPRENEURSHIP DEVELOPMENT — CONCEPT & SCOPE**

- 1.1 Entrepreneurship development concept and need in context of changing global environment; scope in local and global market.
- 1.2 Desirable qualities of entrepreneur; relativity importance; methods to Cultivate, its role and need for success.
- 1.3 Concept and importance of productivity, quality, cost consciousness and customer's satisfaction & need analysis.
- 1.4 Types of enterprise.

#### **Unit – II: FACILITY PLANNING**

- 2.1 Product (Physical and service both) selection
- 2.2 Process Selection
- 2.3 Facility location
- 2.4 Facility layout and handling
- 2.5 Capacity Planning

## **Unit – III: MANAGING CRITICAL RESOURCES**

- 3.1 Sources of finance—types advantages and disadvantages.
- 3.2 Cost control & importance, methods.
- 3.3 Managing human resource
- 3.4 Materials Management
- 3.5 Time Management

## **Unit – IV: MANAGING ENTREPRISE**

- 4.1 SWOT (strength, Weakness, opportunity and Threat) analysis - Meaning and importance.
- 4.2 Strategies to set and achieve goals.
- 4.3 Formal and non-formal aids.
- 4.4 Benefits to an enterprise including financial; source—types of aids /benefits.
- 4.5 Leadership importance.
- 4.6 Dealing with Government/non-Government bodies.
- 4.7 Budgeting—need importance, Control and allocation.
- 4.8 Marketing channels—need and selection criteria.



## **TGT603:ELECTRONIC PRACTICE**

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis ESE for 40 marks and PA for 60 marks.

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT603	ELECTRONIC PRACTICE	0	4	4	00	00	40	60	100

### **List of Practical:**

- 1) Measure voltage, current, frequency, power, power factor for single and three-phase supply.
- 2) To study about Wire fan, tube light, two-way control (staircase wiring).
- 3) Wire instrument panel with various accessories following standard codes.
- 4) Preparing the drawing for wiring a newly built room, without any electrical wiring along with a bill of materials with specifications; the room may be a class-room, an office, a shop, a clinic, a small workshop etc.
- 5) Draw electrical/electronic circuit diagram using IEEE standard symbols and
- 6) Identify and rectify open circuit, and short circuit faults in PCB/System
- 7) Solder and de-solder electronic components on different types of PCB
- 8) Test assembled electronic circuit for various parameters and faults
- 9) Identify and test electrical/electronic active and passive components
- 10) Use basic source and measuring instruments (power supply, function generator, CRO, DMM)
- 11) Identify various types of ports and connectors
- 12) Different type of switches like limit switch, proximity switch, push switch.

### **Reference Books:**

1. Electronic Principles, Albert Malvino and David J Bates, Mc Graw Hill(7th Edition)
2. Electronic Devices, Thomas L. Floyd, Pearson (7th Edition)
3. Electronic Devices and Circuits, David A. Bell, Oxford Press (5th Edition)
4. Integrated Electronics, Jacob Millman, Christos, Tata McGraw Hill (2nd Edition)

**Open Ended Problems:** Apart from above experiments a group of students has to undertake open ended problem/design problem. Few examples of the same are given below.

1. To DESIGN a device for charging small battery during door opening and closing using Coil and/or Magnet based DAMPING mechanism.
2. To DESIGN a Passive method for cooling laptops by diverting the heat produced on to the un-utilized (TOP) surface of the laptop.
3. To DESIGN a mobile charger using Solar PV cell panel for offices and house hold. (The conventional charger may be eliminated).
4. To DESIGN/DEVELOP an INNOVATIVE electronic weighing machine.
5. To DESIGN develop an electronic lock for house in the workshop
6. To DESIGN/DEVELOP an innovative electrical bell using electronics components in the workshop.

**Components:**

Various types of resistors, capacitors, inductors, diodes, transistors, wires, cables, connectors, Batteries, switches, relays, etc.

**Tools:**

Pliers, cutters, strippers, screw driver, crimping, soldering iron, de-soldering pump, hot-air Soldering and de-soldering station, multi-meter, tester, series lamp, megger, clamp-on-meter

**Instruments:**

1. CRO (At least 20MHz)
2. Function Generator (Frequency range upto 20 MHz) – need to have sine, square wave output.
3. Dual Power Supply (0-12V/15V DC)/3A
4. Micrometers for measurement of voltage and current with suitable ranges.
5. Multimeter
6. Megger
7. Clamp – on – meter
8. Soldering and de-soldering station
9. Various electrical and electronic tool kits for testing and assembly.

## **TGT604: INDUSTRIAL PRACTICE AT SPINNING**

**TEACHING AND EVALUATION SCHEME:** The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis ESE for 200 marks and PA for 300 marks and internal theory of 40 and external theory of 60 marks.

Course Code	Course Title	Credit		Total	Marks				Total
		Th.	Pra/Field		Th.		Practical		
					I	E	ESE	PA	
TGT604	INDUSTRIAL PRACTICE AT SPINNING	6	12	18	40	60	200	300	600

### **Areas to be covered:**

- A) Improving quality of raw material i.e. Bale Cotton/ Sliver
- B) Optimization of Spinning processes
- C) Optimization of mechanical parameters of Spinning machinery
- D) Enhancing Spinning productivity
- E) Improving quality of end product in terms of imperfections, faults, strength, CV% .
- F) Improving of Yarn Realization

### **List of Topics/Practical:**

- 1) Optimization of speed and setting related parameters.
- 2) Improving condition of critical parts.
- 3) Snap Study for Spinning machinery
- 4) Cleaning of Spinning machinery.
- 5) Observing effect of greasing and oiling in Spinning machines.
- 6) Identifying effect of cleaning system at final yarn stage.
- 7) Checking performance of cleaning/ opening machines.
- 8) Performance checking of combing machine in terms of removal of short fibres/ neps.
- 9) Checking of production of Spinning machinery and their realization
- 10) To study cleaning efficiency of blow room and carding.

- 11) Performance checking of drafting systems at Spinning.
- 12) Level of Relative Humidity in Spinning Process
- 13) To observe Yarn quality, Moisture content, Twist contraction % etc. as per standard norms
- 14) Observing effects of carding v/s Combing processes.

### **Form of Report Writing:**

- A) Background of Project
- B) Objectives of Project
- C) Methods on Experimental Works
- D) Results Obtained
- E) Discussion
- F) Conclusions of the Project Study
- G) Acknowledgements
- H) Annexures on Actual Machinery Parameters, Types of Machinery, Raw Material Quality, Spinning Process Sequence, Etc.