

Hemchandracharya North Gujarat University,  
Patan

## **Community College**

Programme on

**Advanced Diploma in Textile and Ginning Technology**

Curriculum of Sem-II

**Offered at**

Pramukh Swami Science and H.D. Patel Arts College

Sarva Vidyalaya Campus, Kadi

I=INTERNAL EXAM,E=EXTWRNAL EXAM,

ESE=END SEMESTER EXAM, PA=PROGRESSIVE ASSESMENT

## 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
	TOTAL			30	120	180	280	420	1000

**MODEL PAPER**

**Hemchandracharya North Gujarat University, Patan  
Community College  
'Textile and ginning technology' Semester -II  
External Examination, Month, Year  
Subject:**

**Time: 2 hrs**

**Date:**

**Maximum marks: 60**

**Q.1 Answer any 10 questions. Each question carries 1 mark  
(OBJECTIVE QUESTIONS)**

**(10\*1=10 Marks)**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

**Q. 2 Answer any 5 questions. Each question carries 6 marks  
(SHORT QUESTIONS)**

**(5\*6=30 Marks)**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

**Q.3 Answer any 2 question. The question carries 10 marks  
(DESCRIPTIVE QUESTIONS)**

**(2\*10=20 Marks)**

- 1.
- 2.
- 3.

# CC TEXTILE AND GINNING TECHNOLOGY

## 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
	TOTAL			30	120	180	280	420	1000

## TGT201:COMPUTER APPLICATION- I

**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		Practical		
					ESE	PA	
TGT202	COMPUTER APPLICATION- I	0	2	2	40	60	100

Unit	Major Learning	Topics and Sub-topics
<b>Unit – I Basics of Computer System</b>	1.1 Describe computer hardware and software 1.2 Identify I/O devices 1.3 Describe functioning of CU ALU and memory unit 1.4 Differentiate various types of printers 1.5 Explain use of OS 1.6 Demonstrate various file handling operations	<b>Basics of Computer System</b> 1.1 Concept of Hardware and Software 1.2 Computer block diagram 1.3 Input Output unit 1.4 CPU, Control Unit, Arithmetic logic Unit (ALU), Memory Unit 1.5 Monitor, Printers: Dot matrix, Laser, Inkjet, Plotters, Scanner 1.6 System software and Application Software 1.7 Operating system concepts, purpose and functions 1.8 Operations of Windows OS.

<p><b>Unit– II</b></p> <p><b>Using MS - Word 2007</b></p>	<p>2.1 Use basics text formatting features</p> <p>2.2 Manipulate text</p> <p>2.3 Use page Setup features</p> <p>2.4 Use spell and grammar utility</p> <p>2.5 Work with graphics/ clipart</p> <p>2.6 Create and manipulate table</p> <p>2.7 Use auto shapes and its formatting with text</p>	<p><b>Using MS - Word 2007</b></p> <p>2.1 Overview of Word processor</p> <p>2.2 Basics of Font type, size, colour,</p> <p>2.3 Effects like Bold, italic , underline, Subscript and superscript,</p> <p>2.4 Case changing options,</p> <p>2.5 Inserting, deleting, undo and redo, Copy and Moving (cutting) text within a document,</p> <p>2.6 Formatting Paragraphs and Lists</p> <p>2.7 Setting line spacing; single</p> <p>2.8 Page settings and margins including header and footer</p> <p>2.9 Spelling and Grammatical checks</p> <p>2.10 Table and its options, Inserting rows or columns, merging and splitting cells, Arithmetic Calculations in a Table.</p>
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Unit	Major Learning	Topics and Sub-topics
<b>Unit– III</b>  <b>Using MS - Excel 2007</b>	3.1 Use basic formatting and data entry features 3.2 Use formula and functions 3.3 Work with graphics 3.4 Create and manipulate charts 3.5 Use header and footer options 3.6 Setup page layout and print worksheet	<b>Using MS - Excel 2007</b>  3.1 Introduction to Excel 2007, 3.2 Introduction to data, Cell address, Excel Data Types, Concept of hyperlink 3.3 Introduction to formatting, number, text and date formatting 3.4 Concept of worksheet and workbook 3.5 Understanding formulas, Operators in Excel 2007, Operators Precedence, Understanding Functions, Common Excel Functions such as sum, average, min, max, date, transpose, In, And, or, sqrt, power, upper, lower. 3.6 Types of graphics : Word art, auto shapes , Images 3.7 Introduction to charts, overview of different types of charts available with Excel 3.8 Concept of print area, margins, header, footer and other page setup options

## **LEARNING RESOURCES:**

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

Sr. No.	Author	Title of Books	Publication
1	R Taxali	Computer Course	Tata McGraw Hills. New Delhi.
2	Xavier	World Wide Web design with HTML	Tata McGraw Hills. New Delhi.
3	CURTIN, FOLEY, SEN, MORIN	INFORMATION TECHNOLOGY	TMH
4	V. RAJARAMAN (3RD EDITION)	FUNDAMENTALS OF COMPUTERS	PHI
5	CISTEMS	INTERNET AN	TMH

6	SAGMAN	MICROSOFT OFFICE FOR WINDOWS( 'O' LEVEL DOEACC)	PEARSON EDUCATION ISBN 81- 7808-341-8
7	C. XAVIER	WORLD WIDE WEB	TMH
8	COURTER	MASTERING MS OFFICE -	TECHMEDIA
9	DAVID D.BUCH	PAGEMAKER 6.5 /7	BPB PUBLICATION
		PHOTOSHOP 6/ 7	BPB PUBLICATION

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

1. Microsoft Office Professional 2010
2. Norton Antivirus 2012
3. Window 7.0
4. MS-OFFICE Indic



## **TGT202:ENGINEERING WORK SHOP PRACTICE (ELECTRICAL)**

**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 and Students are also 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	ES E	PA	
TGT202	ENGINEERING WORK SHOP PRACTICE (ELECTRICAL)	4	4	8	40	60	80	120	300

### **DETAILED COURSE CONTENTS**

Unit	Major Learning	Topics and Sub-topics
<b>Unit– I Electrical I Tools</b>	1a. Use various electrical tools and measuring instruments.	1.1 Pliers, nose plier, cutter, screw driver, tester, test lamp etc. Ammeter, voltmeter, wattmeter, clip on meter, Multimeter, Megger, etc.
<b>Unit– II Cables and Switches</b>	2a. Select different types of wires, cables, light sources and switches.	2.1 Single core cable, multicore cable, single strand wire, multi strand wire, shielded wire, different types of light sources etc.; Toggle switch
<b>Unit– III Resistor s</b>	3a. Select/identify different types of resistors.	3.1 Rheostat, wire wound resistor, Carbon film resistor, Carbon composition resistor, fixed and variable potentiometer etc.
<b>Unit–IV Earthing and Electrical I Safety</b>	4a. Undertaking pipe earthing.	4.1 Earthing, pipe earthing, plate earthing, Electrical safety tools Electrical safety rules, I.E. rules for electrical hazards and accidents
<b>Unit–V Electrical I wiring</b>	5a. Types of wiring and wiring circuit	5.1 Types of wiring and system, different wiring circuits.

## LIST OF EXERCISES/PRACTICALS:

The experiments should be properly designed and implemented with an attempt to develop different types of skills leading to the achievement of the above mentioned expected competency.

Sr. No.	Unit No.	Practicals / Exercises
1	I	Identify various tools used for wiring.
2	I	Identify the symbols used in electrical circuit diagrams.
3	I	Identify and connect various electrical measuring instruments and
4	I	Use common testing instruments used in electrical workshops: 1: Test lamp. 2: line tester. 3: Multimeter. 4: Clamp-on
5	I	Connect different domestic appliances to power supply and measure current drawn by them using 1)Ammeter. 2)Tong
6	I	Identify different types of domestic wirings.
7	II	Identify and specify different types of wires, cables, cable joints
8	II	Identify different types of light sources, open circuit, closed circuit
9	III	Identify and specify different types of switches used for different
10	III	Identify and specify different types of sockets and plugs used for
11	III	Know the working of various electrical circuit protective devices
12	I & III	Prepare a meter board for lighting and power installation using MCB, energy meter, fuse unit, DP switch, indicators and bus
13	IV	Identify and specify different types of conducting, insulating materials, resistors as per standard color code practice.
14	IV	Conduct mock artificial respiration and first aid exercises to learn
15	IV	Undertake earthing practice (good demonstration)
16	V	Carry out following wirings a. Tube light wiring b. Stair case wiring c. Godown wiring d. parallel loop wiring

## **LEARNING RESOURCES:**

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

<b>S.No.</b>	<b>Author</b>	<b>Title of Books</b>	<b>Publicatio</b>
1	Mithal, G.K.	Electrical Engineering Materials	Khanna Publication ,2011
2	Gupta, J.B. , & Gupta, Renu	Electrical engineering materials & semiconductor devices	S.K. Kataria & sons, 2012
3	Singh, Surjit	Electrical engineering drawing	S.K. Kataria & sons, 2012
4	Bhatia, S.L.	Handbook of Electrical Engineering	Khanna Publication ,2012
5	Uppal, S.L. & Garg ,G.C.	Electrical Wiring, Estimating and Costing	Khanna Publication ,2012

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

- 1) Various tools for wiring such as wire stripper, bearing puller, etc.
- 2) Various electrical measuring instruments such as digital and analogue multimeters, ammeters, voltmeters, wattmeters, frequency meters, phase sequence meters, tong tester, etc.
- 3) Various safety devices for protection of electrical installation, earthing rods, megger, insulation tester, etc..
- 4) Various safety devices used for first aid and electric fire hazards.  
v. Soldering kit.
- 5) Different types of cables, wires, switches, light sources, resistors, capacitors, inductors, insulating and conducting materials, MCBs, ELCBs, etc.
- 6) Various domestic appliances (e.g. fan, heater, electric iron, geyser etc.)
- 7) Various electrical power supplying equipments (e.g. transformer, variac, d.c.power supply etc)

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

- 1) [http://en.wikipedia.org/wiki/Electrical\\_wiring](http://en.wikipedia.org/wiki/Electrical_wiring)
- 2) <http://www.kpsec.freeuk.com/components/switch.htm>
- 3) <http://home.howstuffworks.com/electrical-tools.htm>

## TGT203:GINNING TECHNOLOGY-I

**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		Theory		
					I	E	
TGT203	GINNING TECHNOLOGY 1	4	0	4	40	60	100

### Topic 1: Definition of Ginning and its yield

- 1.1 Quality of various kapas bolls and their size
- 1.2 Kapas grading and heaping
- 1.3 Moisture in kapas
- 1.4 Attachment Strength of fibers to seeds
- 1.5 Presence of immature seeds / clusters in kapas
- 1.6 Ginning %

### Topic 2: Ginning Systems and Working of Roller Gin Machine / Maintenance

- 2.1 Development of Roller gin machine and its maintenance
- 2.2 Gin machine structure, its installation & settings
- 2.3 Kapas feeder and function of beater
- 2.4 Care for fixed knife and moving knife
- 2.5 Size and numbers of roller grooves
- 2.6 Necessity of gears in roller ginning machine

### Topic 3: Cleaning Systems for Kapas and Ginned Cotton

- 3.1 Pre cleaning systems / machines
- 3.2 Structure of pre cleaning machines, their settings, effect of various speeds etc.
- 3.3 Systems for cleaning of ginned cotton fibers
- 3.4 Working of post cleaning machines and effects of cleaning on fiber properties

### Reference book:

Ginning technology by CIRCOT

## TGT204:SPINNING PROCESS-II

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Course Code	Course Title	Credit		Total	Marks		Total
		Th.	Pra/Field		Theory		
					I	E	
TGT204	SPINNING PROCESS 2	4	0	4	40	60	100

### Topic 1: Fibers Parallelization and Doubling of Material

- 1.1 Principles of Fibers Parallelization / Material Doublings
- 1.2 Methods of Fibers Parallelization
- 1.3 Machinery / Process Parameters Affecting Level of Fibers Parallelization
- 1.4 Effect of Fibers Parallelization on Removal Efficiency of Short Fibers / Fibers Entanglements
- 1.5 Systems for Doubling of Material
- 1.6 Function of Auto Leveler
- 1.7 Wrapping of Material at Different Stages of Spinning Process

### Topic 2: Attenuation of Material

- 2.1 Methods / Systems for Attenuation of Material
- 2.2 Principles of Drafting
- 2.3 Parameters Affecting Level Attenuation of Material
- 2.4 Effect of Attenuation on Productivity and Quality of Yarn

### Topic 3: Yarn Spinning and its Winding

- 3.1 Twisting Method to Convert Fibers into Yarn Thread
- 3.2 Factors Affecting Conversion of Fibers into Yarn
- 3.3 Critical Machinery Parameters for Yarn Preparation
- 3.4 Importance of Winding and its Method
- 3.5 Effect of Winding on Yarn Quality

## **Practical:**

- 1) Identify effect of speed and setting related parameters affecting fibrous neps and short fiber levels.
- 2) Measurement of draft levels of drawing / speed frame and ring frame.
- 3) Identifying causes affecting variation in yarn twist.

## **Reference book:**

Spinning process by SITRA

## TGT205: GINNING 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		Practical		
					ESE	PA	
TGT205	GINNING PRACTICE	0	6	6	80	120	200

### List of Practical

1. Checking performance of kapas transportation system. To study air pressure, revolutions of suction fans, diameter & length of ducting pipe etc.
2. Performance checking of pre ginning cleaner in terms of removal of immature bolls. To observe effects of its rollers' speed, settings between various parts, condition of parts on fibers quality etc.
3. To observe quantity of kapas from heap to pre ginning cleaner to auto feeder of roller gin machine. Efficiency of labour / machine operators.
4. Checking of production of double roller gin machines and their ginning %. Speed / settings related parameters affecting production and ginning%.
5. To study the effect of condition of various critical parts on performance of roller gin machine.
6. To check the performance of ginned lint transportation system. Observing effects of air pressure, shape / position of mouth piece, stationery condenser, ducting diameter / fan RPM etc.
7. To study cleaning efficiency of post ginning cleaner. Performance checking of post ginning machine considering type of trash present in the cotton.
8. Performance checking of moisture system at ginning. Level of moisture / quality of moisture in cotton.
9. To observe bale size, weight, packing etc. as per ISI norms

## TGT206:SPINNING 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		Practical		
					ESE	PA	
TGT206	SPINNING PRACTICE	0	6	6	80	120	200

### **List of Practicals:**

1. Find out cleaning efficiency of blow room and carding machineries
2. Neps generation level at blow room
3. Fibers rupture intensity at blow room
4. Neps reduction efficiency at carding
5. Waste level at blow room and carding
6. Wrapping of slivers of carding / drawing machines
7. Measurement of comber lap weight
8. Noil level at combing
9. Combing efficiency in terms of removal of short fibers / neps
10. Setting of sliver hank at finisher draw frame
11. Breakage of roving and yarn threads
12. Find out roving stretching
13. Measurement of Drafting roller pressure / roller eccentricity
14. Measurement of suction pressure at ring frame
15. Weight of winding cone / moisture level in cones

Data entry on production / efficiency of all spinning machineries