SHIVAJI UNIVERSITY, KOLHAPUR

STRUCTURE AND SYLLABUS OF
Diploma in Computer Based Textile Design
(Under the Community College Scheme of UGC)

TITLE : **Diploma in Computer Based Textile Design**
Syllabus (Semester Pattern)

YEAR OF IMPLEMENTATION : Syllabus will be implemented from June, 2015

DURATION : Diploma (One Y ear)

INTAKE : **50**

PATTERN OF EXAMINATION: Semester Pattern

- ➢ **Theory Examination** - At the end of semester as per Shivaji University Rules
- ➢ **Practical Examination** - i) In the 1ˢᵗ & 2ⁿᵈ semester of Diploma there will
  be internal assessment of practical record,
  related report submission and project reports
  at the end of semester.

MEDIUM OF INSTRUCTION : English / Marathi

STRUCTURE OF THE COURSE : Diploma
Two Semesters per Year
Two General Papers per year / semester
Three Vocational Papers per Year / Semester
One Industry Visit/ Study Tour and on job raining

SCHEME OF XAMINATION

A) THEORY
- ➢ The theory examination shall be at the end of the each semester.

- ➢ All the general theory papers & vocational theory papers shall carry 50 marks.

- ➢ All practicals shall carry 50 marks each.

- ➢ Evaluation of the performance of the students in theory and practical shall be on the basis of semester examination as mentioned above.

- ➢ Question paper will be set in the view of entire syllabus preferably covering each unit of the syllabus.

❖ **Nature of question paper for Theory Examination** (Excluding Business Communication Paper) -
    i.   There will be seven questions carrying equal marks.
    ii.   Students will have to solve any five questions.
      Q. No. 1 : MCQ type question
      Q. No. 2 to Q. No. 6 : Long answer type questions
      Q. No. 7 : Short Notes with internal choice (Two out of Three)

B) PRACTICAL

Evaluation of the performance of the students in practical shall be on the basis of semester examination (Internal assessment at the end of Semester - I and Semester - II).

❖ **Nature of question paper for Practical Examination** -

   i.   **Duration of Practical Examination :** 3 Hrs.(1 hr. for paper work and oral, 2 hrs for live implementation of practical work)

   ii.   **Nature of Practical Question Paper :**
      There will be three or four questions of 15 Marks each, Out of which student have to attempt any two questions.

   iii.   **Distribution of marks :**
      Total Marks   : 50 Marks
      Journal   : 10 Marks
      Oral Examination   : 10 Marks
      Practical Examination : 30 Marks

STANDARD OF PASSING :

As per the guidelines and rules for Diploma under Community College.

STRUCTURE OF THE COURSE :

Semester - I							
Sr. No	Paper No.	Title	Theory	Practical /Project	Marks (Total)	Distribution of Marks	
						Theory	Practical
1	I	Business Communication - I	Theory	Practical	50	50	--
2	II	Basics of Textile Designing	Theory	Practical	100	50	50
3	III	Fabric Calculations	Theory	Practical	100	50	50
4	IV	Fabric Structure	Theory	Practical	50	50	--
5	V	Basics of Computer	Theory	Practical	100	50	50
6	VI	Industrial Visit		Practical	50	--	50

		Semester - II					
Sr. No	Paper No.	Title	Theory	Practical /Project	Marks (Total)	Distribution of Marks	
						Theory	Practical
1	VII	Business Communication - II	Theory	Practical	50	50	--
2	VIII	Fabric Structure & Analysis	Theory	Practical	100	50	50
3	IX	Textile Designing Softwares	Theory	Practical	100	50	50
4	X	Production Planning & Control in Weaving	Theory	Practical	50	50	--
5	XI	Microsoft Excel	Theory	Practical	50	50	--
6	XII	Lab Course Based on Paper No. X & XI	--	Practical	50	--	50
7	XIII	On Job Training	--	--	50	--	50

SCHEME OF TEACHING :

		Semester - I			
Sr.No	Paper No.	Title	Distribution of Workload (Per Week)		
			Theory	Practical	(Total)
1	I	Business Communication - I	2	--	2
2	II	Basics of Textile Designing	3	2	5
3	III	Fabric Calculations	3	2	5
4	IV	Fabric Structure	3	--	3
5	V	Basics of Computer	3	2	5
6	VI	Industrial Visit	--	--	--
		Total	**14**	**06**	**20**

		Semester - II			
Sr.No	Paper No.	Title	Distribution of Workload (Per Week)		
			Theory	Practical	(Total)
1	VII	Business Communication - II	2	--	2
2	VII	Fabric Structure & Analysis	3	2	5
3	IX	Textile Designing Softwares	3	2	5
4	X	Production Planning & Control in Weaving	3	--	3
5	XI	Microsoft Excel	3	--	3
6	XII	Lab Course Based on Paper No. X & XI	--	2	2
7	XIII	On Job Training	--	--	--
		Total	**14**	**06**	**20**

ELIGIBILITY FOR ADMISSION:
     10 + 2 from any faculty or equivalent qualification in any related stream.

ELIGIBILITY FOR FACULTY
     B.Text.,M.Sc.(Computer Science),MCA,M.A.(English)

REQUIREMENTS :

1) Faculty Requirement –

      Teaching – 1 full time & 1 CHB Lecturer for textile design
                      1 CHB Lecturer for Business Communication

      Non – Teaching – 1 Lab Assistant, 1 Jr. Clerk, 1 Lab Attendent / Peon

2) Computer Lab - Twenty computers with electricity backup facility, Internet Broadband
            connectivity.

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Subject wise credit assignment for Diploma in Computer Based Textile Design

Sr. No	Paper No.	Title	Theory/ Practical/ Project	Marks (Total)	Distribution of Marks		Credits	
					T	P	Theory	Practical
			Semester - I					
1	I	Business Communication - I	Theory	50	50	--	3	--
2	II	Basics of Textile Designing	Theory & Practical	100	50	50	4	3
3	III	Fabric Calculations	Theory & Practical	100	50	50	4	3
4	IV	Fabric Structure	Theory	50	50	--	4	--
5	V	Basics of Computer	Theory & Practical	100	50	50	4	3
6	VI	Industrial Visit	Practical	50	--	50	--	2
		Total		**450**	**250**	**200**	**19**	**11**

Sr. No	Paper No.	Title	Theory/ Practical/ Project	Marks (Total)	Distribution of Marks		Credits	
					T	P	Theory	Practical
			Semester - II					
1	VII	Business Communication - II	Theory	50	50	--	3	--
2	VIII	Fabric Structure & Analysis	Theory & Practical	100	50	50	4	3
3	IX	Textile Designing Softwares	Theory & Practical	100	50	50	4	3
4	X	Production Planning & Control	Theory	50	50	--	4	--
5	XI	Microsoft Excel	Theory	50	50	--	4	--
6	XII	Lab Course Based on Paper No. X & XI	Practical	50	--	50	--	3
7	XIII	On Job Training	Practical	50	--	50	--	2
		Total		**450**	**250**	**200**	**19**	**11**

EVALUATION SYSTEM :

1. **Standard of Passing –**
   The maximum credits for Diploma in Food Processing semester course (of two semesters) will be 30 X 2 = 60 credits. To pass in each paper students are required to obtain 4 grade points in each paper, it means 20 Marks for 50 Marks Theory / Practical papers.

2. **Assessment of Project / Industrial visit /study tour /Internship Report**

   i. The Industrial visit/study tour/on-job training report must be submitted by the prescribed date usually two weeks before the end of academic session of the semester.

   ii. It is desirable that the topics for Industrial visit/study tour/ on-job training report shall be assigned by the end of previous semester.

   iii. The Industrial visit/study tour/ on-job training report and its presentation shall be evaluated by the coordinator of the course and concerned faculty**.**

3. **Grade point for Theory/Practical/ Industrial visit /study tour / on-job training Report**

   Table –I: for 50 Marks Theory or Practical

Grade Point	Marks out of	Marks obtained	Letter Grade	Description of performance
0	50	AB	Ab	Absent
0	50	0.0 to 2.5	F	Fail
1	50	2.6 to 5.0		
1.5	50	5.1 to 7.5		
2	50	7.6 to 10.0		
2.5	50	10.1 to 12.5		
3	50	12.6 to 15.0		
3.5	50	15.1 to 19.9		
4	50	20.0 to 22.5	P	Pass
4.5	50	22.6 to 24.9		
5	50	25.0 to 27.5	C	Average
5.5	50	27.6 to 29.9		
6	50	30.0 to 32.5	B	Above Average
6.5	50	32.6 to 34.9		
7	50	35.0 to 37.5	B+	Good
7.5	50	37.6 to 39.9		
8	50	40.0 to 42.5	A	Very Good
8.5	50	42.6 to 44.9		
9	50	45.0	A+	Excellent
9.5	50	45.1 to 47.5		
10	50	47.6 to 50.0	O	Outstanding

4. **Computation of SGPA and CGPA:**
   Following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) may be adopted:

   ➢ The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the course components taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e.

   SGPA $(S_i) = \sum(C_i \times G_i) / \sum C_i$

   where 'C_i' is the number of credits of the ith course component and 'G_i' is the grade point scored by the student in the ith course component.

- The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a programme, i.e.

CGPA = $\sum(C_i \times S_i) / \sum C_i$

where 'Si' is the SGPA of the ith semester and Ci is the total number of credits in that semester.

- The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

- At the end of each year of Diploma Program, student will be placed in any one of the divisions as detailed below:

SGPA and CGPA Table

Grade Point	Letter Grade	Description of performance
0.00 to 3.99	F	Fail
4.00 to 4.49	P	Pass
4.49 to 4.99	C	Average
5.00 to 5.49	B	Above Average
5.50 to 5.99	B+	Good
6.00 to 6.99	A	Very Good
7.00 to 8.49	A+	Excellent
8.5 to 10.00	O	Outstanding

- Ist Class with distinction: CGPA >= 7.0 and above
- Ist Class: CGPA >= 6.00 and < 7.00
- Higher IInd Class: CGPA > =5.50 and < 6.00
- IInd Class: CGPA > =5.00 and < 5.50
- Pass Class: CGPA > =4.00 and < 5.00
- Fail: CGPA < 4.00

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Semester - I
Paper – I : Business Communication - I

Work Load - 2   Total Marks – 50
Theory – 2 Lectures / Week   Theory - 50 Marks
Practical – ---   Practical – ---

Section - I: Communication Skills

Unit 1 Describing Objects/ People/ Places
Unit 2 Describing Daily Routine
Unit 3 Narration (what is happing now/ what happened before)

Section - II: Reading Comprehension

Unit 4 Runner, by Romen Basu
Unit 5 In Sahyadri Hills, A Lesson in Humility, by Sudha Murthy

Pattern of Question Paper
SEMESTER - I

Total Marks: 50

		Reading Comprehension	Marks
Q.1	A	Five multiple choice objective type questions on Reading Skill. (Four choices should be given, out of which one should be the most correct choice)	05
	B	Five objective type questions on textual vocabulary on i) Synonyms ii) Antonyms iii) Change the grammatical classes iv) Use of phrases	05
Q.2	A	Answer the following questions in two to three sentences each (3 out of 5)	09
	B	Write short note on the following in about 50 to 60 words (2 out of 3)	06

		Communication Skills	
Q.3	A	Unit No.1 Describing Objects/ People	06
	B	Unit No. 1 Describing Places	06
Q.4	A	Unit No.2 Describing Daily Routine	07
	B	Unit No.3 Narration	06

SHIVAJI UNIVERSITY, KOLHAPUR
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Semester - I
Paper – II : Basics of Textile Designing

Work Load - 5   Total Marks – 100
Theory – 3 Lectures / Week   Theory - 50 Marks
Practical – 2 Lectures/Week/Batch   Practical – 50 Marks

Unit – I   **Introduction**

  - ➢ Fibre to fabric process
  - ➢ Types of yarn
  - ➢ Terms & definitions used in textiles

Unit – II   **Fabric Forming Methods**
  - ➢ Weaving
  - ➢ Knitting
  - ➢ Nonweaving
  - ➢ Weaving preparatory machines & their objects

Unit – III   **Types of Weaving Machines (Looms)**
  - ➢ Passage of warp through weaving machine
  - ➢ Primary, Secondary & Auxiliary motion of looms

Unit – IV   **Basic Concepts of Design**
  - ➢ Interlacement diagram & its representation on graph paper
  - ➢ Concept of design
  - ➢ Draft peg plan and denting order
  - ➢ Different types of drafts used in weaving

Practical –

  1) Study of process flow chart in spinning.
  2) Study of process flow chart in weaving.
  3) Study of process flow chart in processing.
  4) General study of loom.
  5) Loom running.
  6) Study of dobby & dobby pegging

References –

  1) Woven cloth construction by A. T. C. Robinson, R. Marks, Textile Institute (Manchester, England)
  2) Textile terms and definitions Book by The Textile Institute
  3) Principles of Weaving by R. Marks and A.T.C. Robinson

SHIVAJI UNIVERSITY, KOLHAPUR
Diploma in Computer Based Textile Designing
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Semester - I
Paper – III : Fabric Calculations

Work Load - 5
Theory – 3 Lectures / Week
Practical – 2 Lectures/Week/Batch

Total Marks – 100
Theory - 50 Marks
Practical – 50 Marks

Unit – I   Yarn Numbering System
  ➢ Direct & indirect yarn numbering system & their calculations

Unit – II   Fabric Weight Calculations
  ➢ Calculations of fabric weight in
      a. gm/sq m
      b. gm/m

Unit – III   Fabric Engineering Calculations
  ➢ Crimp of warp, weft
  ➢ Cover factor
  ➢ Estimated reed count calculations

Unit – IV   Costing Calculations

  ➢ Estimation of yarn required at different processes
  ➢ Cost of yarn
  ➢ Sizing cost
  ➢ Weaving cost
  ➢ Production cost

Practical –

1) Count EPI & PPI with pick glass.
2) Yarn count testing with wrap reel method.
3) Fabric GSM testing with GSM Cutter.
4) Estimation of reed coumt.
5) Estimation of yarn count by direct count balance.
6) Fabric shrinkage estimation.

References –

1) Textile Design and Colour: Elementary Weaves and Figured Fabrics by William Watson
2) Fabric Structure And Design by N. Gokarneshan

Diploma in Computer Based Textile Designing
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Semester - I
Paper – IV : Fabric Structure

Work Load - 3
Theory – 3 Lectures / Week
Practical – ---

Total Marks – 50
Theory - 50 Marks
Practical – ---

Unit – I   **Plain Weave**
- Design, Draft & peg plan
- Ornaments of plain weave
- Different types of fabrics produced with plain weave (e.g. poplin, shirting, suiting, tusser, saree, dhoti etc.)

Unit – II   **twill weave**
- Design, Draft & peg plan
- Right handed and left handed twill
- Warp faced and weft faced twill weaves

Unit – III   **Satin weave**
- Design, Draft & peg plan
- Satin and sateen weaves
- Selection of move number for different satin weaves

Unit – IV   **Derivation of plain Weave**
- Warp rib
- Weft rib
- Matt (regular & irregular)

References –

1) Textile Design and Colour: Elementary Weaves and Figured Fabrics by William Watson
2) Fabric Structure And Design by N. Gokarneshan

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Semester - I
Paper – V : Basics of Computer

Work Load - 5
Theory – 3 Lectures / Week
Practical – 2 Lectures/Week/Batch

Total Marks – 100
Theory - 50 Marks
Practical – 50 Marks

Unit – I   Fundamentals
- ➢ Introduction, Characteristics, History & Evolution, Organization of Computers, Concept of Hardware & Software, Applications of Computers in Various Fields, Computer Hardware and Software

Unit – II   Peripheral Devices
- ➢ Input Devices – Keying: Keyboard, Touch screen, Pointing: Mouse, digitizer, Joystick and scanning devices: Scanner, OMR, OCR, and MICR.
- ➢ Output Devices –Monitors , Screen Image Projector, Printers & its types, Plotters.
- ➢ Memory Devices - Primary Memory & Secondary memory

Unit – III   Operating System
- ➢ Meaning and Definition, Structure of O.S., Types of O.S., Functions of O.S., Windows Operating system: Components of window- Desktop, windows explorer, control panel, Managing the files and folders, Accessories: Paint, calculator and notepad.

Unit – IV   Computer Networking
- ➢ Concept of network: advantages and limitations, Communication modes, Network Types & Topology.

Practical –

1) Creating folder, cut, copy, paste, managing file and folder in windows.
2) Arrange icons, set display properties.
3) Adding and removing software and hardware.
4) Setting date and time, screen saver and appearance.
5) Using windows accessories.(Notepad, WordPad, Paint).
6) Settings of all control panel items.
7) Search file.

References –

1) Computer Fundamentals by P.K.Sinha and Priti Sinha
2) Computer fundamentals by Rajaraman
3) Computer Today – Basandara
4) Computer Fundamentals, Architecture & Organisation By B. Ram
5) Information technology by D. S. Yadhav.

SHIVAJI UNIVERSITY, KOLHAPUR
Diploma in Computer Based Textile Designing
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Semester - II
Paper – VII : Business Communication - II

Work Load - 2   Total Marks – 50
Theory – 2 Lectures / Week   Theory - 50 Marks
Practical – ---   Practical – ---

Section - I: Communication Skills

Unit 1 Preparing a C.V. and Writing a Letter of Application
Unit 2 Writing News Reports
Unit 3 Making Enquiries and Giving Instructions

Section - II: Reading Comprehension

Unit 4 The Final Decision, by Anasuya Shankar
Unit 5 My Education, by Rabindranath Tagore
Unit 6 Telephonic Conversation, by Wole Soyinka

Pattern of Question Paper
SEMESTER - II

Total Marks: 50

		Reading Comprehension	Marks
Q.1	A	Five multiple choice objective type questions on Reading Skill. (Four choices should be given, out of which one should be the most correct choice)	05
	B	Five objective type questions on textual vocabulary on i) Synonyms ii) Antonyms iii) Change the grammatical classes iv) Use of phrases	05
Q.2	A	Answer the following questions in two to three sentences each (3 out of 5)	09
	B	Write short note on the following in about 50 to 60 words (2 out of 3)	06

		Communication Skills	
Q.3	A	Unit No.1 Write a Letter of Application with C.V.	10
Q.4	A	Unit No.2 Write News Reports	07
	B	Unit No.3 Make Enquiries and Give Instructions	08

Diploma in Computer Based Textile Designing
(Under the Community College Scheme of UGC)

Semester - II
Paper – VIII : Fabric Structure & Analysis

Work Load - 5   Total Marks – 100
Theory – 3 Lectures / Week   Theory - 50 Marks
Practical – 2 Lectures/Week/Batch   Practical – 50 Marks

Unit – I   **Twill Weave Derivatives**

- ➢ Broken Twill
- ➢ Herring Bone Twill
- ➢ Waved Twill / Zigzag Twill
- ➢ Elongated Twill
- ➢ Rearranged Twill
- ➢ Diamond Twill
- ➢ Diaper Twill
- ➢ Fancy Twill

Unit – II   **Satin Weave Derivatives & Towel Weaves**

- ➢ Irregular Satin
- ➢ Sponge
- ➢ Mock Leno
- ➢ Huck - a - Back
- ➢ Honey Comb
- ➢ Brighten Honey Comb
- ➢ Crepe Weave

Unit – III   Analysis of fabric of plain, twill, drill and satin weave

Unit – IV   **Fabric Analysis**

- ➢ Analysis of fabrics of yarn dyed, dobby weave, extra warp and extra weft

Practical –

1) Analysis of plain weave fabrics.
2) Analysis of warp rib, weft rib fabrics.
3) Analysis of twill weave fabrics.
4) Analysis of satin weave fabrics.
5) Analysis of twill weave derivatives fabrics.
6) Analysis of towel weave fabrics.

References –

1) Textile Design and Colour: Elementary Weaves and Figured Fabrics by William Watson
2) Fabric Structure And Design by N. Gokarneshan

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Semester - II
Paper – IX : Textile Designing Softwares

Work Load - 5   Total Marks – 100
Theory – 3 Lectures / Week   Theory - 50 Marks
Practical – 2 Lectures/Week/Batch   Practical – 50 Marks

Unit – I
- ➢ File Menu - New, Open, Save, Save as Page Set up, Print, Preview, Close, Exit.
- ➢ Edit Menu – Graph Setting, Design, Paper Setting
- ➢ Show Menu – Design window, Pattern window, Back view, Finished fabric, Wallpaper

Unit – II
- ➢ Yarn Menu – Yarn developments, Grindle yarns, Fancy yarns, Slub yarns, Multi-Colored yarns
- ➢ Generate Menu – Patterns – Regular Patterns, Irregular Patterns, Stripes / Checks
- ➢ Pattern Menu – Warp, Weft, Draft, Peg plan

Unit – III
- ➢ Miscellaneous Menu – Wallpapers, Modify Design Attributes, Fabric weight, Fabric Cover factor
- ➢ Help Menu

Unit – IV
- ➢ Feeding basic designs to softwares
- ➢ Creating simple plain stripes / checks
- ➢ Dobby stripes / dobby checks
- ➢ Yarn dyed patterns
- ➢ Designs & calculations in software
- ➢ Reading & technical sheet (Data sheet)

Practical –

1) Study of basic menus in designing software.
2) Feeding of basic fabric information to designing software.
3) Creating various designs availabe from library menu.
4) Feeding of basic designs in software.
5) Formation of dobby stripes designs.
6) Formation of dobby checks design.

References –

1) Manuals of textile designing softwares.

Diploma in Computer Based Textile Designing
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Semester - II
Paper – X : Production Planning & Control in Weaving

Work Load - 3   Total Marks – 50
Theory – 3 Lectures / Week   Theory - 50 Marks
Practical – ---   Practical – ---

Unit – I **Warping & Sizing Sheet**
> - Yarn inward to sizing
> - Yarn consumption at sizing
> - Sizing count / warping count calculation
> - Wastage at sizing

Unit – II **Yarn / Beam Inward sheet**

> - Weft yarn inward
> - Beam inward

             Yarn consumption sheet
> - Weft yarn requirement

Unit – III **Yarn stock sheet**
> - Sizing stock
> - Warping stock
> - Weaving stock

             Count wise stock report

Unit – IV **Fabric Inspection Tools & Study of Fabric Defects**
> - 4 point system
> - 10 point system

             Study of Fabric Defects
> - Starting marks
> - Thick, Thin places
> - Warp / weft patta
> - Wrong drawing
> - Wrong denting
> - Miss end
> - Design cut
> - Dobby line
> - Floats
> - Loose pick
> - Short pick
> - Brocken pick
> - Double pick
> - Lacing
> - Rupture
> - Chappa
> - Tight end / loose end
> - Let of / Take up patta

Practicals –

1) Preparation of warping and sizing sheet by using MS - Excel.
2) Preparation of yarn/beam inward by using MS - Excel.
3) Preparation of weaving yarn consumption by using MS - Excel.
4) Fabric inspection.
5) Observation of fabric faults under microscope.
6) Preparation of stock sheets by using MS – Excel.

References –

1) Weaving material, machines and methods by M. K. Talukdar
2) Process Control in Weaving by M. C. Paliwal & P. D. Kimothi

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Semester - II
Paper – XI : Microsoft Excel

Work Load - 3
Theory – 3 Lectures / Week
Practical – ---

Total Marks – 50
Theory - 50 Marks
Practical – ---

Unit – I Inroduction
- Spread sheet application, Menus, Tool bars and icons
- Spreadsheet - Opening, saving, closing, printing file, setting margins, spread sheet addressing

Unit – II Entering And Editing Data

- Copy, cut, paste, undo, redo, find, search, replace, filling continuous rows and columns, inserting data, cells, columns, rows and sheet
- Tools- Error checking, spell check, formula auditing, tracking changes, customization .

Unit – III Data Computation & Function Types
- Data Computation – Setting formula, finding total in rows and columns
- Functions Types - Mathematical, Group, string, date and time

Unit – IV Formatting & Working with spreadsheet
- Formatting Spread Sheet - Alignment, font, border, hiding, locking, cells, highlighting values, background color, bordering and shading,
- Working With Sheet - Sorting, filtering, validation, consolidation, subtotals
- Charts - Selecting, formatting, labeling, scaling,

Practicals –

1) Creating & Editing Worksheet, Fill Handle.
2) Use Formulas and Functions.
3) Perform different calculations.
4) Preparing Charts.
5) Error checking, spell check, formula auditing.

References –

1) Microsoft Office-Excel 2007 inside out Microsoft Press Publication
2) Microsoft Office 2010 Bible- WILEY
3) Step by step 2007 Microsoft Office system by Curtis Frye, Joyce Cox, Steve Lambert.

Diploma in Computer Based Textile Designing

(Under the Community College Scheme of UGC)

Semester - II
Paper – XII : Lab Course Based on Paper No. X & XI

Work Load - 2	Total Marks – 50
Theory – ---	Theory - ---
Practical – 2 Lectures/Week/Batch	Practical – 50 Marks

Practical List is given under Paper No. X & XI