GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT

COURSE CURRICULUM
COURSE TITLE: COMPUTER AIDED WOVEN DESIGN
(COURSE CODE: 3362905)

Diploma Program in which this course is offered	Semester in which offered
Textile Manufacturing Technology	Sixth

1. RATIONALE

The time consuming and cumbersome process of textile designing has been made easier by CAD. The textile designs are the original works of the designers. CAD helps them to visualize and see their imaginative design in final form without producing any sample swatch. The usefulness of CAD has driven the market to produce specific software for different aspects of textile and apparel manufacturing. Knitted and woven textiles are much influenced by the demand of fashion. Computer Aided Design and Operation has now become an integral part of textile industry, hence the course of CAWD in Textiles has been designed to meet such need of industries.

2. COMPETENCY

The course content should be taught and implemented with the aim to develop required skills in the students so that they are able to acquire the following competency required by the industry:

- **Use CAD software for textile designing and production.**

3. COURSE OUTCOMES (COs)

The theory should be taught and practical should be carried out in such a manner that students are able to acquire required learning outcomes in cognitive, psychomotor and affective domain to demonstrate following course outcomes:

i. Operate CAD software.
ii. Produce fabric designs using CAD software.
iii. Modify given fabric design using CAD software for different shedding mechanism.
iv. Match color for producing prominent design on computer.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				
				Theory Marks		Practical Marks		Total
L	T	P	C	ESE	PA	ESE	PA	
0	0	2	2	00	00	20	30	50

Legends: L-Lecture; T – Tutorial/Teacher Guided Student Activity; P -Practical; C – Credit;; ESE -End Semester Examination; PA - Progressive Assessment.

5. COURSE CONTENT DETAILS

Not Applicable

6. SUGGESTED SPECIFICATION TABLE WITH HOURS and MARKS (THEORY)

Not Applicable

7. SUGGESTED EXERCISES/PRACTICAL

The practical/exercises should be properly designed and implemented with an attempt to develop different types of skills **(outcomes in psychomotor and affective domain)** so that students are able to acquire the competencies/programme outcomes. Following is the list of practical exercises for guidance.

***Note**: Here only outcomes mainly in psychomotor domain are listed as practical/exercises. However, if these practical/exercises are completed appropriately, they would also lead to development of certain outcomes in affective domain which would in turn lead to development of **Course Outcomes** related to affective domain. Thus over all development of **Programme Outcomes (**as given in a common list at the beginning of curriculum document for this programme) would be assured.*

Faculty should refer to that common list and should ensure that students also acquire outcomes in affective domain which are required for overall achievement of Programme Outcomes/Course Outcomes.

S. No.	Practical Experiment/Exercise (Outcomes in the Psychomotor Domain)	Approx. Hours Required
1	Demonstrate the CAD software operation	02
2	Carryout manual designing of woven textiles	02
3	Plan design (Design Program) - Design size, overall size on the loom - No. of ends and picks. - Size of repeating motif and within the design - warp and weft thread Pattern. Possible weave effect.	02
4	Demonstrate Production of fabric structure and woven fabric designing CAD Software for Tappet shedding.	02
5	Demonstrate Production of Dobby designing through CAD	02
6	Demonstrate Production of Jacquard designing through CAD	02
7	Create library of the basic weaves.	02
8	Create image with Printed program or using scanner, (image file creation).	02
9	Recall the image in the draft program.	02
10	Demonstrate Production of Dobby/Jacquard art work and editing work. (Art work file creation)	02
11	Add colour pattern and yarn as per design programme in art work.	02
12	Add weave structure to the design and visual confirmation of design as per finishing required	02
13	Perform Float checking and editing.	02
14	Prepare worksheet for given data.	02
15	Demonstrate sample analysis and develop it using CAD software.	02
	Total	**30**

8. SUGGESTED STUDENT ACTIVITIES

i. Literature survey of different Woven Design Software.
ii. Fabric Sample Analysis – Tappet, Dobby and Jacquard.
iii. Visit to Technical Textile industry and preparing report with sketches.
iv. Prepare journals based on practical performed in laboratory.

9. SPECIAL INSTRUCTIONAL STRATEGIES (if any)

S.No.	Instructional Strategies	Key resources needed
1	Classroom discussion and demonstration on computer	Excel software with window plat form.
2	Classroom discussion and demonstration visit to CAD Centre	Tex-CAD Software with dobby and jacquard module, Wonder Weave Software with dobby and jacquard module
3	Class room discussion and demonstration on computer	Tex-CAD Software with dobby and jacquard module, Wonder Weave Software with dobby and jacquard module

10. SUGGESTED LEARNING RESOURCES

A) Books

S.No.	Author	Title of Books	Publication
1	Stephan Gray	CAD/CAM in textile and clothing	Gower publishing, Hampshire, UK ISBN 056607673
2	Zeid I.	CAD/CAM theory and practise	Tata McGraw Hill
3	Aldrich W.	CAD in clothing and Textile : A collection of expert views	Wiley-Blackwell; New Delhi ISBN 0632038934
4	Taylor P.	Computers in the Fashion Industry	Heinemann Professional USA ISBN 0434919160
5	Textile Institute	Computers in the world of Textile	The Textile Institute ISBN : 09007369x
6	Barella A.	On-line Quality control in spinning and weaving	The Textile Institute ISBN187081200x
7	Aldrich W.(1992)	CAD in clothing and textiles	BSP publication, London, Prima Vision User Manual

B) Major Equipment/ Instrument with Broad Specifications

Computerized Sample loom compatible with textile design software.

C) Software/Learning Websites

Woven design Software (i.e. Tex-CAD Software with dobby and jacquard module, Wonder Weave Software with dobby and jacquard module)

11. COURSE CURRICULUM DEVELOPMENT COMMITTEE

Faculty Members from Polytechnics

- **Prof. V. N. Soni**, HOD Textile Manufacturing , R.C T I, Ahmedabad
- **Prof. R. T. Patel**, Lecturer in Textile Manufacturing, R.C T I, Ahmedabad
- **Prof. (Ms.) S.S. Parmar**, Lecturer in Textile Manufacturing, R.C T I, Ahmedabad
- **Prof. D.V. Bihola**, Lecturer in Textile Manufacturing, B.P.T I, Bhavnagar

Faculty Members from NITTTR Bhopal

- **Dr. C. K. Chugh**, Professor, Department of Mechanical Engineering
- **Dr. Joshua Earnest**, Professor Department of Electrical and Electronics Engineering